10/798,198

EAST Search History INCLUDING INTERFERENCE

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2185	514/255.05 or 514/255.06 or 544/405 or 544/406	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2006/11/20 10:46
L2	120	l1 and ((transforming adj growth) or (tgf) or pyrazinoyl or (pyrazine-2-carboxylic) or (pyrazin-2-carboxylic))	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2006/11/20 10:48
L3	53	l2 and ((transforming adj growth) or tgf)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT	OR	ON	2006/11/20 10:48

STN (UPDATED PRIOR TO ALLOWANCE) SEARCH TRANSCRIPT 10/798,198

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TERMINAL (ENTER 1, 2, 3, OR ?):2


* * * * * * * * * *   Welcome to STN International   * * * * * * * * * *

 NEWS  1           Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2           "Ask CAS" for self-help around the clock
 NEWS  3  AUG 09   INSPEC enhanced with 1898-1968 archive
 NEWS  4  AUG 28   ADISCTI Reloaded and Enhanced
 NEWS  5  AUG 30   CA(SM)/CAplus(SM) Austrian patent law changes
 NEWS  6  SEP 11   CA/CAplus enhanced with more pre-1907 records
 NEWS  7  SEP 21   CA/CAplus fields enhanced with simultaneous left and right
                   truncation
 NEWS  8  SEP 25   CA(SM)/CAplus(SM) display of CA Lexicon enhanced
 NEWS  9  SEP 25   CAS REGISTRY(SM) no longer includes Concord 3D coordinates
 NEWS 10  SEP 25   CAS REGISTRY(SM) updated with amino acid codes for pyrrolysine
 NEWS 11  SEP 28   CEABA-VTB classification code fields reloaded with new
                   classification scheme
 NEWS 12  OCT 19   LOGOFF HOLD duration extended to 120 minutes
 NEWS 13  OCT 19   E-mail format enhanced
 NEWS 14  OCT 23   Option to turn off MARPAT highlighting enhancements available
 NEWS 15  OCT 23   CAS Registry Number crossover limit increased to 300,000 in
                   multiple databases
 NEWS 16  OCT 23   The Derwent World Patents Index suite of databases on STN
                   has been enhanced and reloaded
 NEWS 17  OCT 30   CHEMLIST enhanced with new search and display field
 NEWS 18  NOV 03   JAPIO enhanced with IPC 8 features and functionality
 NEWS 19  NOV 10   CA/CAplus P-Term thesaurus enhanced
 NEWS 20  NOV 10   STN Express with Discover! free maintenance release Version
                   8.01c now available
 NEWS 21  NOV 13   CA/CAplus pre-1967 chemical substance index entries enhanced
                   with preparation role

 NEWS EXPRESS  NOVEMBER 10 CURRENT WINDOWS VERSION IS V8.01c, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 25 SEPTEMBER 2006.

 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS LOGIN    Welcome Banner and News Items
 NEWS IPC8     For general information regarding STN implementation of IPC 8
 NEWS X25      X.25 communication option no longer available

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FILE 'HOME' ENTERED AT 10:52:59 ON 20 NOV 2006
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=> FILE REG
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.21       0.21

FILE 'REGISTRY' ENTERED AT 10:53:15 ON 20 NOV 2006
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STRUCTURE FILE UPDATES:   19 NOV 2006  HIGHEST RN 913611-00-4
DICTIONARY FILE UPDATES:  19 NOV 2006  HIGHEST RN 913611-00-4

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=> ....Testing the current file.... screen

ENTER SCREEN EXPRESSION OR (END):end


=>
Uploading C:\Program Files\Stnexp\Queries\MUNCHOF  TGF.str
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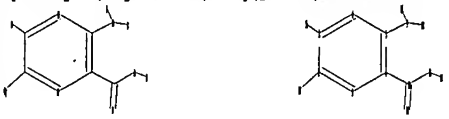

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chain nodes :
9  11  12  13  14  15  16  17  18
ring nodes :
1  2  3  4  5  6
chain bonds :
2-18  3-15  5-9  6-11  9-16  9-17  11-12  11-13  13-14
ring bonds :
1-2  1-6  2-3  3-4  4-5  5-6
exact/norm bonds :
2-18  5-9  11-12  11-13
exact bonds :
3-15  6-11  9-16  9-17  13-14
normalized bonds :
1-2  1-6  2-3  3-4  4-5  5-6
isolated ring systems :
containing 1 :
```

```
G1:C,N

Match level :
1:Atom  2:Atom  3:Atom  4:Atom  5:Atom  6:Atom  9:CLASS  11:CLASS  12:CLASS
13:CLASS  14:CLASS  15:CLASS  16:CLASS  17:CLASS  18:Atom



L1      STRUCTURE UPLOADED

=> que L1

L2   QUE L1

=> D L1
L1 HAS NO ANSWERS
L1                STR
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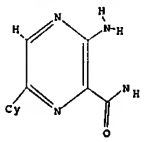

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G1 C,N


Structure attributes must be viewed using STN Express query preparation.


=> S L1
SAMPLE SEARCH INITIATED 10:53:31 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      298 TO ITERATE

100.0% PROCESSED      298 ITERATIONS                          50 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          4925 TO     6995
PROJECTED ANSWERS:              849 TO     1831

L3           50 SEA SSS SAM L1

=> FILE CAPLUS
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.44       0.65

FILE 'CAPLUS' ENTERED AT 10:53:39 ON 20 NOV 2006
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FILE LAST UPDATED: 19 Nov 2006  (20061119/ED)

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=> S L3
L4            5 L3

=> FILE REG
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.46       1.11

FILE 'REGISTRY' ENTERED AT 10:53:51 ON 20 NOV 2006
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http://www.cas.org/ONLINE/UG/regprops.html

=> S L1
SAMPLE SEARCH INITIATED 10:53:56 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      298 TO ITERATE

100.0% PROCESSED      298 ITERATIONS                          50 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          4925 TO     6995
PROJECTED ANSWERS:              849 TO     1831

L5           50 SEA SSS SAM L1

=> S L1 SSS FULL
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```
FULL SEARCH INITIATED 10:54:01 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -      5847 TO ITERATE

100.0% PROCESSED      5847 ITERATIONS                          1408 ANSWERS
SEARCH TIME: 00.00.01

L6          1408 SEA SSS FUL L1

=> FILE CAPLUS
COST IN U.S. DOLLARS                          SINCE FILE      TOTAL
                                                 ENTRY     SESSION
FULL ESTIMATED COST                             166.94      168.05

FILE 'CAPLUS' ENTERED AT 10:54:05 ON 20 NOV 2006
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FILE LAST UPDATED: 19 Nov 2006  (20061119/ED)

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=> S L6
L7          32 L6

=> D 1-5

L7   ANSWER 1 OF 32  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2005:1103771  CAPLUS
DN   143:367331
TI   Pyrazine derivatives as adenosine antagonists, their preparation,
     pharmaceutical compositions, and use in therapy
IN   Tsutsumi, Hideo; Tabuchi, Seiichiro; Minagawa, Masatoshi; Akahane, Atsushi
PA   Astellas Pharma Inc., Japan
SO   PCT Int. Appl., 204 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE         APPLICATION NO.         DATE
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PI   WO 2005095384       A1     20051013     WO 2005-JP5663          20050322
     WO 2005095384       C1     20061026
          W:  AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,
              CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
              GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
              LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
              NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,
              SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
          RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,
              AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,
              EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
              RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,
              MR, NE, SN, TD, TG
PRAI AU 2004-901772      A      20040401
OS   MARPAT 143:367331
RE.CNT  1      THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD
               ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7   ANSWER 2 OF 32  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2005:1078246  CAPLUS
DN   143:367330
TI   Pyrazine derivatives as adenosine antagonists, their preparation,
     pharmaceutical compositions, and use in therapy
IN   Tsutsumi, Hideo; Tabuchi, Seiichiro; Minagawa, Masatoshi; Akahane, Atsushi
PA   Fujisawa Pharmaceutical Co. Ltd., Japan
SO   U.S. Pat. Appl. Publ., 54 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE         APPLICATION NO.         DATE
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PI   US 2005222159       A1     20051006     US 2005-87761           20050324
PRAI EP 2004-901772      A      20040401
OS   MARPAT 143:367330

L7   ANSWER 3 OF 32  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2005:962046  CAPLUS
DN   143:366952
TI   Preparation of bipyridyl amides as modulators of metabotropic glutamate
     receptor-5
IN   Bonnefous, Celine; Kamenecka, Theodore M.; Vernier, Jean-Michel
PA   Merck & Co., Inc., USA
SO   PCT Int. Appl., 79 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
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PI   WO 2005079802       A1     20050901     WO 2005-US3952          20050209
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              GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
              LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,
              NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
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              EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,
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     AU 2005215379       A1     20050901     AU 2005-215379          20050209
     CA 2555402          AA     20050901     CA 2005-2555402         20050209
     EP 1715867          A1     20061102     EP 2005-713111          20050209
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PRAI US 2004-544627P     P      20040212
     WO 2005-US3952      W      20050209
OS   MARPAT 143:366952
RE.CNT  5      THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
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L7   ANSWER 4 OF 32  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2005:450934  CAPLUS
DN   143:7731
TI   Preparation of pyrazine derivatives as adenosine receptor antagonists for
     treating neurological, cardiovascular, and other diseases
IN   Yonishi, Satoshi; Aoki, Satoshi; Matsushima, Yuji; Akahane, Atsushi
PA   Fujisawa Pharmaceutical Co. Ltd., Japan
SO   U.S. Pat. Appl. Publ., 37 pp.
     CODEN: USXXCO
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE         APPLICATION NO.         DATE
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PI   US 2005113387       A1     20050526     US 2004-972340          20041026
PRAI EP 2003-905895      A      20031027
     EP 2004-902764      A      20040524
OS   MARPAT 143:7731

L7   ANSWER 5 OF 32  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2005:395298  CAPLUS
DN   142:447235
TI   Preparation of pyrazines as adenosine A1 and A2a receptor antagonists and
     their pharmaceutical compositions
IN   Yonishi, Satoshi; Aoki, Satoshi; Matsushima, Yuji; Akahane, Atsushi
PA   Fujisawa Pharmaceutical Co., Ltd., Japan
SO   PCT Int. Appl., 152 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE         APPLICATION NO.         DATE
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PI   WO 2005040151       A1     20050506     WO 2004-JP16193         20041025
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              NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY,
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     EP 1678160          A1     20060712     EP 2004-793294          20041025
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PRAI AU 2003-905895      A      20031027
     AU 2004-902764      A      20040524
     WO 2004-JP16193     W      20041025
OS   MARPAT 142:447235
RE.CNT  9      THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD
               ALL CITATIONS AVAILABLE IN THE RE FORMAT


=> D 6-10

L7   ANSWER 6 OF 32  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2005:216619  CAPLUS
DN   142:297864
TI   Preparation of aniline derivatives and related compounds as c-kit
     modulators
IN   Cheng, Wei; Co, Erick Wang; Kim, Moon Hwan; Klein, Rhett Ronald; Le Donna,
     T.; Lew, Amy; Nuss, John M.; Xu, Wei; Bajjalieh, William
PA   Exelixis, Inc., USA
SO   PCT Int. Appl., 169 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE         APPLICATION NO.         DATE
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PI   WO 2005020921       A2     20050310     WO 2004-US28001         20040827
     WO 2005020921       A3     20051006
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              SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE,
              SN, TD, TG
     AU 2004268621       A1     20050310     AU 2004-268621          20040827
     CA 2536954          AA     20050310     CA 2004-2536954         20040827
     EP 1663204          A2     20060607     EP 2004-782473          20040827
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PRAI US 2003-499224P     P      20030829
     WO 2004-US28001     W      20040827
OS   MARPAT 142:297864

L7   ANSWER 7 OF 32  CAPLUS  COPYRIGHT 2006 ACS on STN
AN   2004:817651  CAPLUS
DN   141:332206
TI   Preparation of biaryl substituted 6-membered heterocycles as sodium
     channel blockers
IN   Chakravarty, Prasun K.; Fisher, Michael H.; Parsons, William H.; Liang,
     Jun; Zhou, Bishan
PA   Merck & Co., Inc., USA
SO   PCT Int. Appl., 125 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.          KIND   DATE         APPLICATION NO.         DATE
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PI   WO 2004084824       A2     20041007     WO 2004-US8532          20040319
     WO 2004084824       A3     20050331
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              BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,
              ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
              SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN,
              TD, TG
     AU 2004224392       A1     20041007     AU 2004-224392          20040319
     CA 2519677          AA     20041007     CA 2004-2519677         20040319
     EP 1608622          A2     20051228     EP 2004-757920          20040319
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     CN 1791580          A      20060621     CN 2004-80013599        20040319
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	JP 2006521357	T2	20060921	JP 2006-507395	20040319
PRAI	US 2003-456312P	P	20030324		
	WO 2004-US8532	A	20040319		
OS	MARPAT 141:332206				

L7 ANSWER 8 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:759828 CAPLUS
DN 141:260774
TI Preparation of pyrazinecarboxamide compounds as inhibitors of transforming growth factor (TGF) signaling pathway
IN Munchhof, Michael J.
PA Pfizer Inc., USA
SO U.S. Pat. Appl. Publ., 26 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004180905	A1	20040916	US 2004-798198	20040310
	CA 2517720	AA	20040923	CA 2004-2517720	20040223
	WO 2004080982	A1	20040923	WO 2004-IB581	20040223
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	EP 1606267	A1	20051221	EP 2004-713617	20040223
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	BR 2004008251	A	20060301	BR 2004-8251	20040223
	JP 2006519833	T2	20060831	JP 2006-506288	20040223
PRAI	US 2003-453784P	P	20030311		
	WO 2004-IB581	W	20040223		
OS	MARPAT 141:260774				

L7 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:534197 CAPLUS
DN 141:89115
TI Preparation of novel pyrazinamine or pyridin-2-amine derivs. having selective inhibiting effect at GSK3
IN Berg, Stefan; Hellberg, Sven
PA Astrazeneca Ab, Swed.; Soederman, Peter
SO PCT Int. Appl., 76 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004055009	A1	20040701	WO 2003-SE1957	20031215
	WO 2004055009	C1	20050630		
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	EP 1575942	A1	20050921	EP 2003-781206	20031215
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	CN 1726210	A	20060125	CN 2003-80106483	20031215
	JP 2006512337	T2	20060413	JP 2004-560225	20031215
	US 2006116385	A1	20060601	US 2005-539545	20050616
	NO 2005003459	A	20050812	NO 2005-3459	20050715
PRAI	SE 2002-3753	A	20021217		
	WO 2003-SE1957	W	20031215		
OS	MARPAT 141:89115				

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:534194 CAPLUS
DN 141:89114
TI Preparation of novel 3-aminopyrazine-2-carboxamides having selective inhibiting effect at GSK3
IN Berg, Stefan; Hellberg, Sven
PA Astrazeneca Ab, Swed.; Soederman, Peter
SO PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2004055006	A1	20040701	WO 2003-SE1956	20031215
	WO 2004055006	C1	20050630		
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	EP 1575939	A1	20050921	EP 2003-781205	20031215
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	JP 2006516124	T2	20060622	JP 2004-560224	20031215
	US 2006173014	A1	20060803	US 2005-539546	20050616
PRAI	SE 2002-3752	A	20021217		
	WO 2003-SE1956	W	20031215		
OS	MARPAT 141:89114				

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> D 9-10 IBIB ABS HITSTR

L7 ANSWER 9 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:534197 CAPLUS
DOCUMENT NUMBER: 141:89115
TITLE: Preparation of novel pyrazinamine or pyridin-2-amine derivs. having selective inhibiting effect at GSK3
INVENTOR(S): Berg, Stefan; Hellberg, Sven
PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.; Soederman, Peter
SOURCE: PCT Int. Appl., 76 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	WO 2004055009	A1	20040701	WO 2003-SE1957	20031215
	WO 2004055009	C1	20050630		
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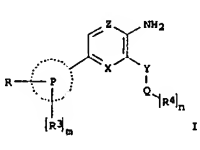
	CA 2508045	AA	20040701	CA 2003-2508045	20031215
	AU 2003287137	A1	20040709	AU 2003-287137	20031215
	EP 1575942	A1	20050921	EP 2003-781206	20031215
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	BR 2003017299	A	20051108	BR 2003-17299	20031215
	CN 1726210	A	20060125	CN 2003-80106483	20031215
	JP 2006512337	T2	20060413	JP 2004-560225	20031215
	US 2006116385	A1	20060601	US 2005-539545	20050616
	NO 2005003459	A	20050812	NO 2005-3459	20050715
PRIORITY APPLN. INFO.:				SE 2002-3753 A	20021217
				WO 2003-SE1957 W	20031215
OTHER SOURCE(S):	MARPAT 141:89115				

GI



AB The title compds. [I; Z = N; Y = CONR5, NR5CO, SO2NR5, NR5SO2, CH2NR5, NR5CONR5, CH2CO, CO, CH2O; X = CH, N; P = Ph or 5-6 membered heteroarom. ring containing one or more heteroatoms selected from N, O or S and said Ph ring or 5-6 membered heteroarom. ring may optionally be fused with a 5-6 membered saturated, partially saturated or unsatd. ring containing one or more atoms selected from C, N, O or S; Q = alkyl, alkenyl or alkynyl; R = CHO, FCH2O, F2CHO, F3CO, etc.; R3 = halo, NO2, CHO, etc.; R4 = halo, NO2, CHO, etc.; m, n = 0-4; R5 = H, alkyl], were prepared and formulated. Thus, treating 1-[(4-bromophenyl)sulfonyl]pyrrolidine with n-butyllithium and triisopropyl borate in THF followed by reacting the intermediate with 3-amino-6-bromo-N-(2-morpholin-4-ylethyl)pyrazine-2-carboxamide in the presence of Pd(dppf)Cl2 and Na2CO3 in THF afforded 26%

3-amino-N-(2-morpholin-4-ylethyl)-6-[4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide hydrochloride. Typical Ki values for the compds. I are in the range of about 0.001 to about 10.000 nM in GSK3β assay.

IT *714218-71-0P 714218-72-1P 714218-74-3P*
714218-75-4P 714218-76-5P 714218-77-6P
714218-78-7P 714218-79-8P 714218-80-1P
714218-81-2P 714218-82-3P 714218-83-4P
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714218-92-5P 714218-93-6P 714218-94-7P
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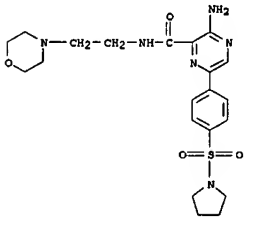
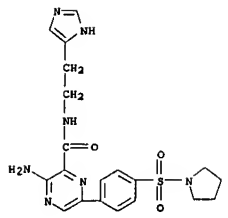
714219-02-0P 714219-03-1P 714219-04-2P
714219-05-3P 714237-63-5P 714237-64-6P
714237-70-4P
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of novel pyrazinamine or pyridin-2-amine deriva. having selective inhibiting effect at GSK3)

RN 714218-71-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[2-(4-morpholinyl)ethyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



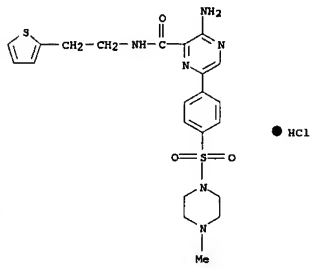
● HCl

RN 714218-72-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[2-(1H-imidazol-4-yl)ethyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



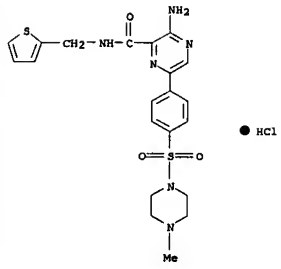
● HCl

RN 714218-74-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[2-(2-thienyl)ethyl]-, monohydrochloride (9CI) (CA INDEX NAME)



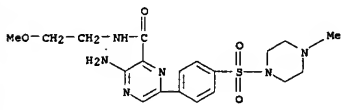
● HCl

RN 714218-75-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-(2-thienylmethyl)-, monohydrochloride (9CI) (CA INDEX NAME)



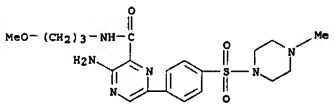
● HCl

RN 714218-76-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(2-methoxyethyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



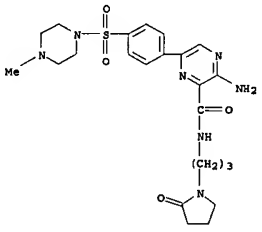
● HCl

RN 714218-77-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-methoxypropyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

RN 714218-78-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[3-(2-oxo-1-pyrrolidinyl)propyl]-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

RN 714218-79-8 CAPLUS
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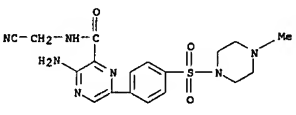
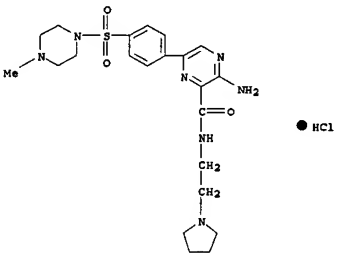


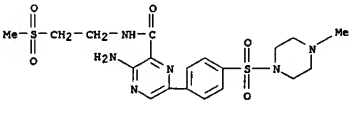
●2 HCl

RN 714218-80-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[2-(1-pyrrolidinyl)ethyl]-, monohydrochloride (9CI) (CA INDEX NAME)



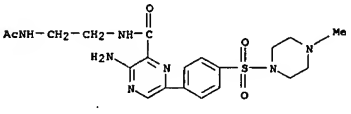
● HCl

RN 714218-81-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[2-(methylsulfonyl)ethyl]-, monohydrochloride (9CI) (CA INDEX NAME)



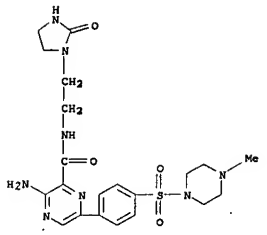
● HCl

RN 714218-82-3 CAPLUS
CN Pyrazinecarboxamide, N-[2-(acetylamino)ethyl]-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



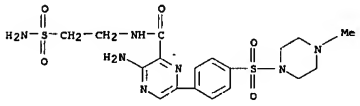
● HCl

RN 714218-83-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[2-(2-oxo-1-imidazolidinyl)ethyl]-, monohydrochloride (9CI) (CA INDEX NAME)



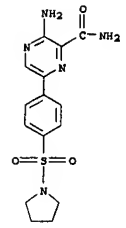
● HCl

RN 714218-84-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[2-(aminosulfonyl)ethyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)

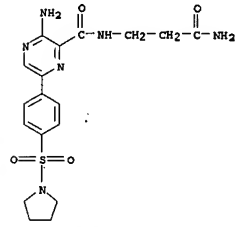


● HCl

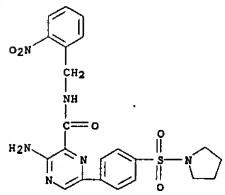
RN 714218-87-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



RN 714218-88-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-amino-3-oxopropyl)-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



RN 714218-89-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[(2-nitrophenyl)methyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



RN 714218-90-3 CAPLUS
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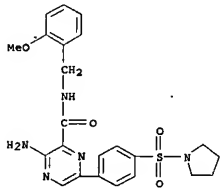

RN 714218-91-4 CAPLUS
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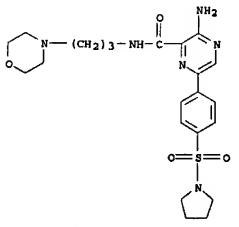
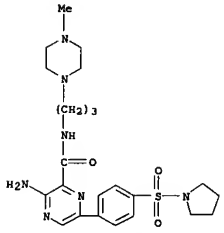
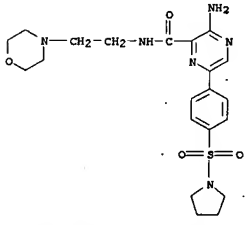


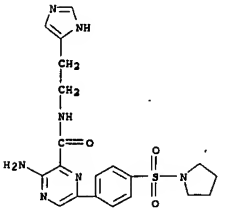
RN 714218-92-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[3-(4-methyl-1-piperazinyl)propyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



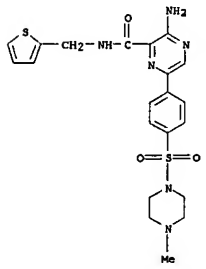
RN 714218-93-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[2-(4-morpholinyl)ethyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



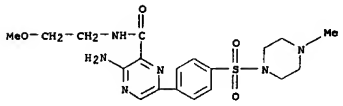
RN 714218-94-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[2-(1H-imidazol-4-yl)ethyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



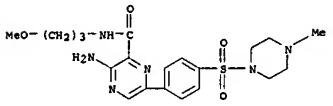
RN 714218-96-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-(2-thienylmethyl)- (9CI) (CA INDEX NAME)



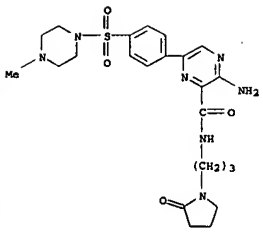
RN 714218-97-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(2-methoxyethyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



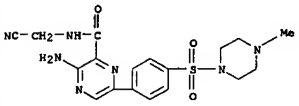
RN 714218-98-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-methoxypropyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



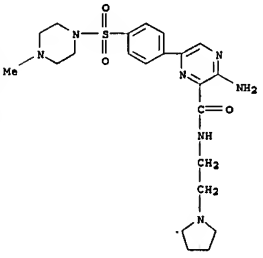
RN 714218-99-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[3-(2-oxo-1-pyrrolidinyl)propyl]- (9CI) (CA INDEX NAME)



RN 714219-00-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(cyanomethyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)

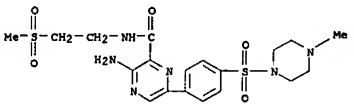


RN 714219-01-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[2-(1-pyrrolidinyl)ethyl]- (9CI) (CA INDEX NAME)

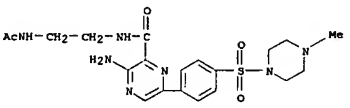


RN 714219-02-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[2-(methylsulfonyl)ethyl]- (9CI) (CA INDEX

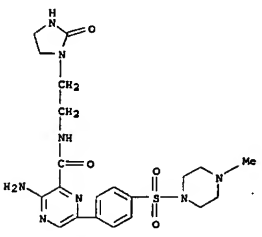
NAME)



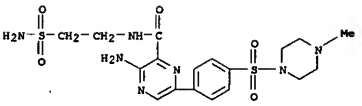
RN 714219-03-1 CAPLUS
CN Pyrazinecarboxamide, N-[2-(acetylamino)ethyl]-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



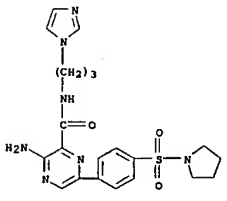
RN 714219-04-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[2-(2-oxo-1-imidazolidinyl)ethyl]- (9CI) (CA INDEX NAME)



RN 714219-05-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[2-(aminosulfonyl)ethyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)

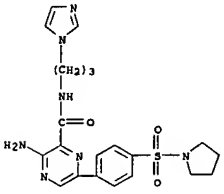


RN 714237-63-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[3-(1H-imidazol-1-yl)propyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)

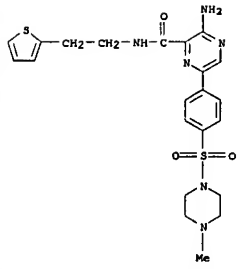


● HCl

RN 714237-64-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[3-(1H-imidazol-1-yl)propyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



RN 714237-70-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[2-(2-thienyl)ethyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:534194 CAPLUS
DOCUMENT NUMBER: 141:89114
TITLE: Preparation of novel 3-aminopyrazine-2-carboxamides having selective inhibiting effect at GSK3
INVENTOR(S): Berg, Stefan; Hellberg, Sven
PATENT ASSIGNEE(S): Astrazeneca Ab, Swed.; Soederman, Peter
SOURCE: PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004055006	A1	20040701	WO 2003-SE1956	20031215
WO 2004055006	C1	20050630		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2003287136	A1	20040709	AU 2003-287136	20031215
EP 1575939	A1	20050921	EP 2003-781205	20031215
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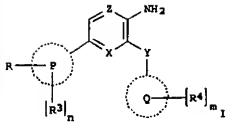
JP 2006516124	T2	20060622	JP 2004-560224	20031215
US 2006173014	A1	20060803	US 2005-539546	20050616
PRIORITY APPLN. INFO.:			SE 2002-3752 A	20021217
			WO 2003-SE1956 W	20031215

OTHER SOURCE(S): MARPAT 141:89114
GI



AB The title compds. [I; Z = N; X = N; Y = CONR5; P = Ph; Q = Ph or 5-6 membered aromatic heteroarom. ring containing one or more heteroatoms selected from N, O, S; R = alkyl(SO2)NR1R2, alkylCONR1R2, OalkylNR1R2 (wherein R1, R2 = H, alkyl, 5-6 membered heterocyclyl, etc.; NR1R2 = 5-6 membered heterocyclyl]; R3, R4 = halo, NO2, CF3, etc.; m, n = 0-1; R5 = H; as a free base or a pharmaceutically acceptable salt], were prepared and formulated. Thus, treating 4-bromo-N-[(1R)-2-methoxy-1-methylethyl]benzenesulfonamide with n-butyllithium and triisopropyl borate in THF followed by reacting the intermediate with 3-amino-6-bromo-N-(pyridin-3-yl)pyrazine-2-carboxamide in the presence of Pd(dppf)Cl2, and Na2CO3 in THF (prepns. of reactants given) afforded 35% 3-amino-6-[4-([[(1R)-2-methoxy-1-methylethyl]amino]sulfonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide hydrochloride. Typical Ki values for the compds. I are in the range of about 0.001 to about 10,000 nM in GSK-3β assay.

IT *486423-43-2P 714237-12-4P 714237-13-5P*
714237-14-6P 714237-15-7P 714237-16-8P
714237-17-9P 714237-18-0P 714237-19-1P
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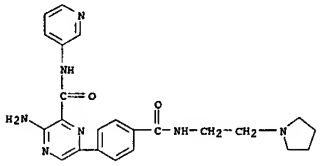
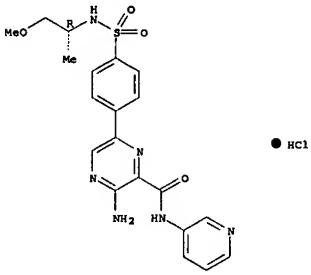
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(preparation of novel 3-aminopyrazine-2-carboxamides having selective inhibiting effect at GSK3)

RN 486423-43-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[[[2-(1-pyrrolidinyl)ethyl]amino]carbonyl]phenyl]- (9CI) (CA INDEX NAME)



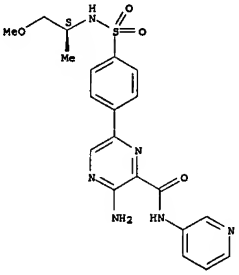
RN 714237-12-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[(1R)-2-methoxy-1-methylethyl]amino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.

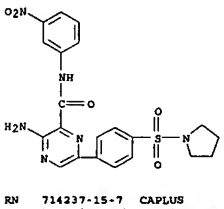


RN 714237-13-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[(1S)-2-methoxy-1-methylethyl]amino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)

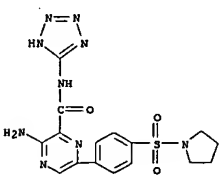
Absolute stereochemistry.



RN 714237-14-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-nitrophenyl)-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)

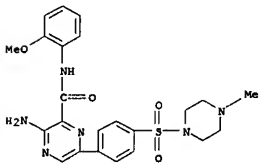


RN 714237-15-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-N-1H-tetrazol-5-yl- (9CI) (CA INDEX NAME)



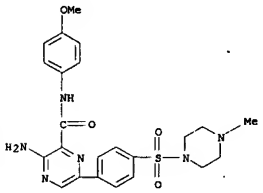
RN 714237-16-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(2-methoxyphenyl)-6-[4-[(4-methyl-1-

piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



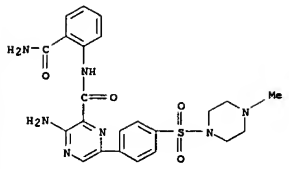
● HCl

RN 714237-17-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(4-methoxyphenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



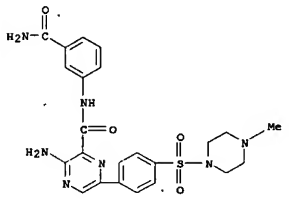
● HCl

RN 714237-18-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[2-(aminocarbonyl)phenyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



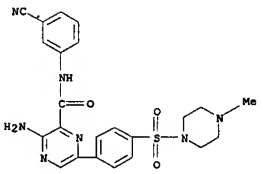
● HCl

RN 714237-19-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[3-(aminocarbonyl)phenyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



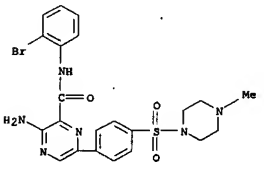
● HCl

RN 714237-20-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-cyanophenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



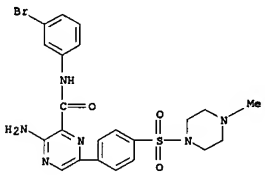
● HCl

RN 714237-21-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(2-bromophenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



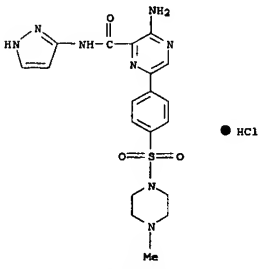
● HCl

RN 714237-22-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-bromophenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



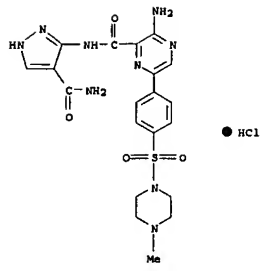
● HCl

RN 714237-23-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-1H-pyrazol-3-yl-, monohydrochloride (9CI) (CA INDEX NAME)



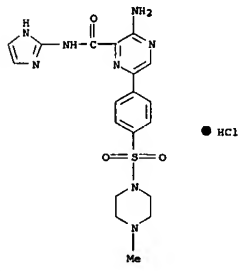
● HCl

RN 714237-24-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[4-(aminocarbonyl)-1H-pyrazol-3-yl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



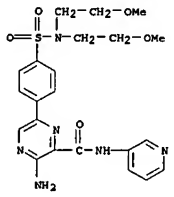
● HCl

RN 714237-25-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-1H-imidazol-2-yl-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



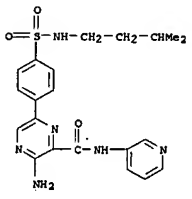
● HCl

RN 714237-26-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-fluoro-4-[2-(4-morpholinyl)ethoxy]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

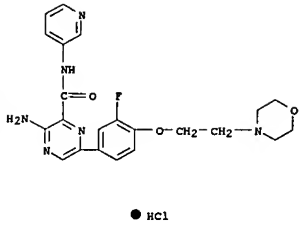
RN 714237-29-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(3-methylbutyl)amino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

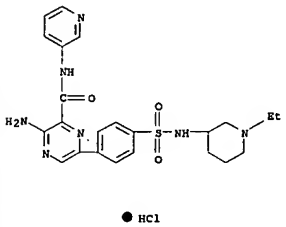
RN 714237-30-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[(1S)-2-methoxy-1-methylethyl]amino]carbonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)

Absolute stereochemistry.



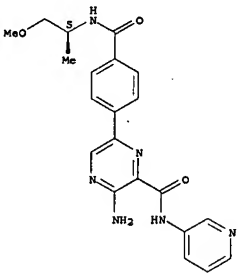
● HCl

RN 714237-27-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(1-ethyl-3-piperidinyl)amino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)



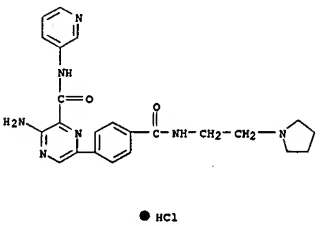
● HCl

RN 714237-28-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[bis(2-methoxyethyl)amino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)



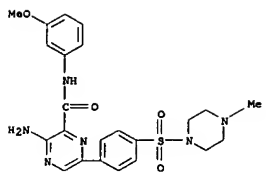
● HCl

RN 714237-31-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[[[2-(1-pyrrolidinyl)ethyl]amino]carbonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



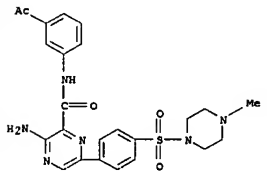
● HCl

RN 714237-32-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-methoxyphenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



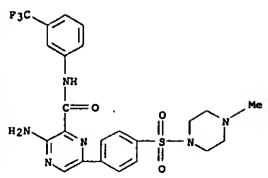
● HCl

RN 714237-33-9 CAPLUS
CN Pyrazinecarboxamide, N-(3-acetylphenyl)-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)



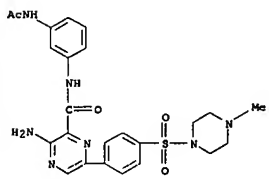
● HCl

RN 714237-34-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[3-(trifluoromethyl)phenyl]-, monohydrochloride (9CI) (CA INDEX NAME)

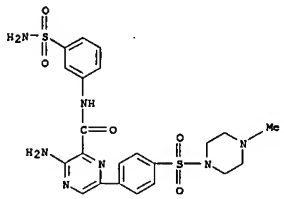


● HCl

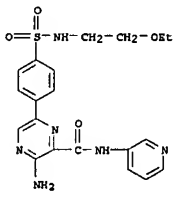
RN 714237-35-1 CAPLUS
CN Pyrazinecarboxamide, N-[3-(acetylamino)phenyl]-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



RN 714237-36-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[3-(aminosulfonyl)phenyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)

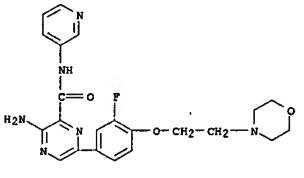


RN 714237-37-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(2-ethoxyethyl)amino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)

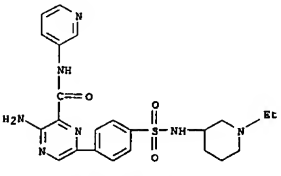


● HCl

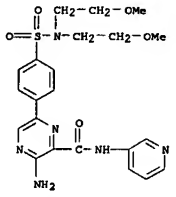
RN 714237-38-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-fluoro-4-[2-(4-morpholinyl)ethoxy]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



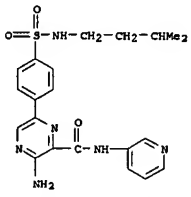
RN 714237-39-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(1-ethyl-3-piperidinyl)amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



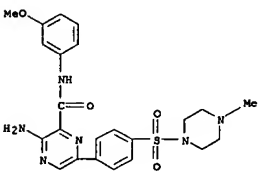
RN 714237-40-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[bis(2-methoxyethyl)amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



RN 714237-41-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(3-methylbutyl)amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

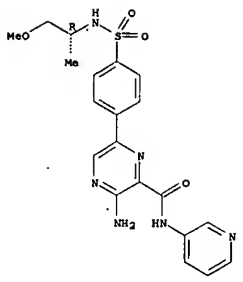


RN 714237-43-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-methoxyphenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



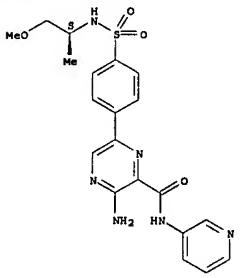
RN 714237-44-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[(1R)-2-methoxy-1-methylethyl]amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

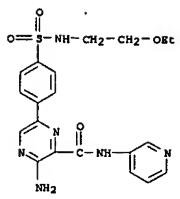


RN 714237-45-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[(1S)-2-methoxy-1-methylethyl]amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

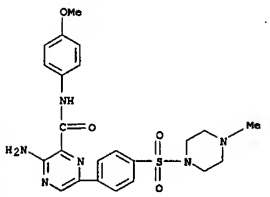
Absolute stereochemistry.



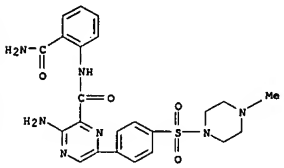
RN 714237-46-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(2-ethoxyethyl)amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



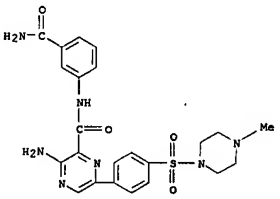
RN 714237-47-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(4-methoxyphenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



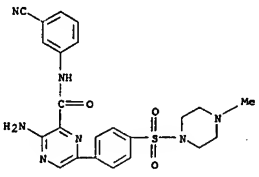
RN 714237-48-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[2-(aminocarbonyl)phenyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



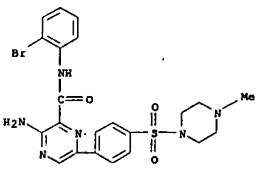
RN 714237-49-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[3-(aminocarbonyl)phenyl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



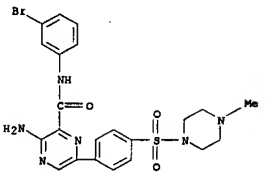
RN 714237-50-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-cyanophenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



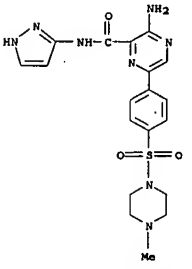
RN 714237-51-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(2-bromophenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



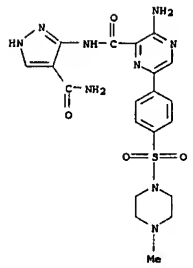
RN 714237-52-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(3-bromophenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



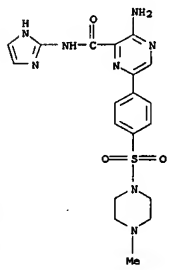
RN 714237-53-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-1H-pyrazol-3-yl- (9CI) (CA INDEX NAME)



RN 714237-54-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[4-(aminocarbonyl)-1H-pyrazol-3-yl]-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



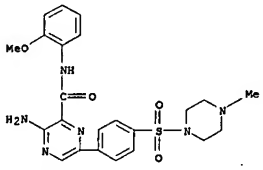
RN 714237-55-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-1H-imidazol-2-yl-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



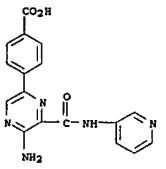
RN 714237-56-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[(1S)-2-methoxy-1-methylethyl]amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

CN Pyrazinecarboxamide, 3-amino-N-(2-methoxyphenyl)-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



IT *486424-13-9P*
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of novel 3-aminopyrazine-2-carboxamides having selective inhibiting effect at GSK3)
RN 486424-13-9 CAPLUS
CN Benzoic acid, 4-[5-amino-6-[(3-pyridinylamino)carbonyl]pyrazinyl]- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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FILE 'CAPLUS' ENTERED AT 10:53:39 ON 20 NOV 2006
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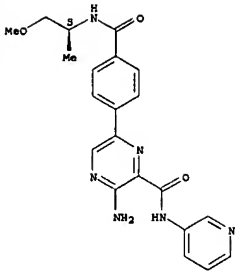
FILE 'CAPLUS' ENTERED AT 10:54:05 ON 20 NOV 2006
L7 32 S L6



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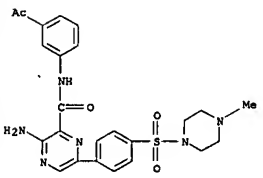
CN Pyrazinecarboxamide, N-(3-acetylphenyl)-3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



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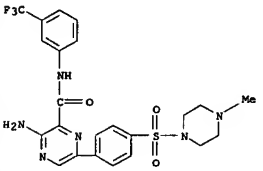
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[3-(trifluoromethyl)phenyl]- (9CI) (CA INDEX NAME)



RN 714237-68-0 CAPLUS

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L7 ANSWER 11 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:534193 CAPLUS
DN 141:89113
TI Preparation of novel pyrazinamine or pyridin-2-amine derivatives having selective inhibiting effect at GSK3
IN Berg, Stefan; Hellberg, Sven; Soederman, Peter
PA Astrazeneca Ab, Swed.
SO PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004055005	A1	20040701	WO 2003-SE1955	20031215
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CN 1729185	A	20060201	CN 2003-80106663	20031215
JP 2006513180	T2	20060420	JP 2004-560223	20031215
US 2006116362	A1	20060601	US 2005-539543	20050616
NO 2005003460	A	20050812	NO 2005-3460	20050715
PRAI SE 2002-3754	A	20021217		
WO 2003-SE1955	W	20031215		

OS MARPAT 141:89113
RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 12 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:205967 CAPLUS
DN 142:113926
TI Product class 14: pyrazines
AU Sato, N.
CS Germany
SO Science of Synthesis (2004), 16, 751-844
CODEN: SSCYJ9
PB Georg Thieme Verlag
DT Journal; General Review
LA English
RE.CNT 506 THERE ARE 506 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 13 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:48253 CAPLUS
DN 140:396760
TI Characteristic IR spectra of 6-aryl-4(3H)-pteridinones
AU Wang, Qiang; Ma, Xiu-yan; Chang, Jun-biao; Wang, Shi; Guo, Rui-yun
CS Henan Analysis and Testing Center, Zhengzhou, 450002, Peop. Rep. China
SO Guangpuxue Yu Guangpu Fenxi (2003), 23(6), 1101-1103

CODEN: GYGFED; ISSN: 1000-0593
PB Beijing Daxue Chubanshe
DT Journal
LA Chinese

L7 ANSWER 14 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:892800 CAPLUS
DN 139:395950
TI Preparation of substituted pyrazines as protein kinase modulators
IN Buhr, Chris A.; Baik, Tae-Gon; Ma, Sunghoon; Tesfai, Zerom; Wang, Longcheng; Co, Erick Wang; Epshteyn, Sergey; Kennedy, Abigail R.; Chen, Baili; Dubenko, Larisa; Anand, Neel Kumar; Tsang, Tsze H.; Nuss, John M.; Peto, Csaba J.; Rice, Kenneth D.; Ibrahim, Mohamed Abdulkader; Schnepp, Kevin Luke; Shi, Xian; Leahy, James William; Chen, Jeff; Dalrymple, Lisa Esther; Foreyth, Thimothy Patrick; Huynh, Tai Phat; Mann, Grace; Mann, Lary Wayne; Takeuchi, Craig Stacy
PA Exelixis, Inc., USA
SO PCT Int. Appl., 468 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003093297	A2	20031113	WO 2003-US13869	20030502
WO 2003093297	A3	20040701		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2484209	AA	20031113	CA 2003-2484209	20030502
AU 2003234464	A1	20031117	AU 2003-234464	20030502
EP 1501514	A2	20050202	EP 2003-728690	20030502
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005530760	T2	20051013	JP 2004-501436	20030502
US 2006211709	A1	20060921	US 2005-513081	20050727
PRAI US 2002-377933P	P	20020503		
WO 2003-US13869	W	20030502		

OS MARPAT 139:395950

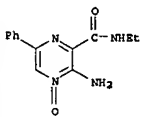
L7 ANSWER 15 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:42253 CAPLUS
DN 138:106713
TI Preparation of heterocyclic amines for the treatment of conditions associated with GSK3
IN Berg, Stefan; Hellberg, Sven
PA Astrazeneca AB, Swed.
SO PCT Int. Appl., 62 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003004475	A1	20030116	WO 2002-SE1340	20020703
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1406877	A1	20040414	EP 2002-749475	20020703
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2004536110	T2	20041202	JP 2003-510642	20020703
US 2004186113	A1	20040923	US 2003-481699	20031222
PRAI SE 2001-2438	A	20010705		
WO 2002-SE1340	W	20020703		

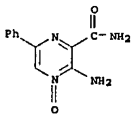
OS MARPAT 138:106713
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> D 12-13 IBIB ABS HITSTR

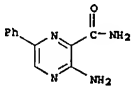
L7 ANSWER 12 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:205967 CAPLUS
DOCUMENT NUMBER: 142:113926
TITLE: Product class 14: pyrazines
AUTHOR(S): Sato, N.
CORPORATE SOURCE: Germany
SOURCE: Science of Synthesis (2004), 16, 751-844
CODEN: SSCYJ9
PUBLISHER: Georg Thieme Verlag
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. Methods for preparing pyrazines are reviewed including cyclization, ring transformation, aromatization and substituent modification.
IT *113424-66-1*
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of pyrazines via cyclization, ring transformation, aromatization and substituent modification)
RN 113424-66-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-ethyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



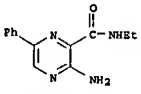
IT *19994-59-3P 113120-69-7P 113424-76-3P*
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of pyrazines via cyclization, ring transformation, aromatization and substituent modification)
RN 19994-59-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-phenyl-, 4-oxide (8CI, 9CI) (CA INDEX NAME)



RN 113120-69-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-phenyl- (9CI) (CA INDEX NAME)

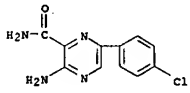


RN 113424-76-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-ethyl-6-phenyl- (9CI) (CA INDEX NAME)

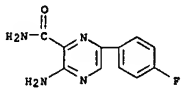


REFERENCE COUNT: 506 THERE ARE 506 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

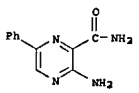
L7 ANSWER 13 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:48253 CAPLUS
DOCUMENT NUMBER: 140:396760
TITLE: Characteristic IR spectra of 6-aryl-4(3H)-pteridinones
AUTHOR(S): Wang, Qiang; Ma, Xiu-yan; Chang, Jun-biao; Wang, Shi; Guo, Rui-yun
CORPORATE SOURCE: Henan Analysis and Testing Center, Zhengzhou, 450002, Peop. Rep. China
SOURCE: Guangpuxue Yu Guangpu Fenxi (2003), 23(6), 1101-1103
CODEN: GYGFED; ISSN: 1000-0593
PUBLISHER: Beijing Daxue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The 6-Aryl-4(3H)-pteridinones and 2-amino-3-carbamoyl-5-phenylpyrazines, and their p-substitute of the Ph series compds. were prepared Their IR spectra have been determined and the relations between the structures and the IR data have been studied. The results showed that the νC-H and δC-H vibration of the Ph was affected by different substituted groups attached on it, and bromine and chlorine have the same effect. We have pointed out the range of Ph C-X vibration on the spectra, and it was also found that the spectra have changed notably after the cyclization. We can quickly and accurately determine whether the acyl was cyclized to lactam or not by IR spectra with the data in this article.
IT *16014-59-8 30838-86-9 113120-69-7*
685887-32-5
RL: PRP (Properties)
(characteristic IR spectra of 6-aryl-4(3H)-pteridinones)
RN 16014-59-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



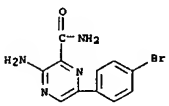
RN 30838-86-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-(4-fluorophenyl)- (9CI) (CA INDEX NAME)



RN 113120-69-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-phenyl- (9CI) (CA INDEX NAME)



RN 685887-32-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-(4-bromophenyl)- (9CI) (CA INDEX NAME)



=> D 16-20

L7 ANSWER 16 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2003:42250 CAPLUS
DN 138:106712
TI Preparation of pyrazine-2-carboxamides as glycogen synthase kinase-3 (GSK3) inhibitors

IN Berg, Stefan; Hellberg, Sven
PA Astrazeneca AB, Swed.
SO PCT Int. Appl., 158 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003004472	A1	20030116	WO 2002-SE1339	20020703
WO 2003004472	C1	20030313		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2452686	AA	20030116	CA 2002-2452686	20020703
EP 1414801	A1	20040506	EP 2002-747795	20020703
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
BR 2002010838	A	20040713	BR 2002-10838	20020703
CN 1551869	A	20041201	CN 2002-813545	20020703
JP 2005505515	T2	20050224	JP 2003-510640	20020703
HU 200500339	A2	20050728	HU 2005-339	20020703
US 2006052396	A1	20060309	US 2003-481721	20031222
ZA 2003009977	A	20050323	ZA 2003-9977	20031223
NO 2004000014	A	20040302	NO 2004-14	20040102
PRAI SE 2001-2439	A	20010705		
WO 2002-SE1339	W	20020703		

OS MARPAT 138:106712
RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 17 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:466012 CAPLUS
DN 137:47228
TI Preparation of spiro[isobenzofuran-1,4'-piperidin]-3-ones and 3H-spiroisobenzofuran-1,4'-piperidines as NPY5 receptor activity modulators
IN Bakthavatchalam, Rajagopal; Blum, Charles A.; Brielmann, Harry L.; Darrow, James William; De Lombaert, Stephane; Hutchison, Alan; Tran, Jennifer; Zheng, Xiaozhang; Elliott, Richard Louis; Hammond, Marlys
PA Neurogen Corporation, USA; Pfizer Inc.
SO PCT Int. Appl., 134 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2002048152	A2	20020620	WO 2001-US47863	20011211
WO 2002048152	A3	20030508		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2002020276	A5	20020624	AU 2002-20276	20011211
US 2003036652	A1	20030220	US 2001-13846	20011211
US 6566367	B2	20030520		
EP 1347982	A2	20031001	EP 2001-270536	20011211
EP 1347982	B1	20051116		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2004520299	T2	20040708	JP 2002-549683	20011211
BR 2001016113	A	20040803	BR 2001-16113	20011211
AT 310004	E	20051215	AT 2001-270536	20011211
ES 2249384	T3	20060401	ES 2001-1270536	20011211
EP 1695977	A2	20060830	EP 2005-16735	20011211
EP 1695977	A3	20060920		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, CY, TR				
US 2004072847	A1	20040415	US 2003-410648	20030409
US 6943199	B2	20050913		
US 2005033048	A1	20050210	US 2003-415457	20030815
US 2006040964	A1	20060223	US 2005-183615	20050718
PRAI US 2000-254990P	P	20001212		
EP 2001-270536	A3	20011211		
US 2001-13846	A3	20011211		
WO 2001-US47863	W	20011211		
US 2003-410648	A3	20030409		

OS MARPAT 137:47228

L7 ANSWER 18 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1997:590066 CAPLUS
DN 127:257127
TI Structural requirements for potent Na/H exchange inhibitors obtained from quantitative structure-activity relationships monocyclic and bicyclic aroylguanidines
AU Yamamoto, Takeshi; Hori, Manabu; Watanabe, Ikuo; Tsutsui, Hisayoshi; Harada, Kengo; Ikeda, Shoji; Ohtaka, Hiroshi
CS Product R and D Laboratory, Kanebo Ltd., Osaka, 534, Japan
SO Chemical & Pharmaceutical Bulletin (1997), 45(8), 1282-1286
CODEN: CPBTAL; ISSN: 0009-2363
PB Pharmaceutical Society of Japan
DT Journal
LA English
RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1988:131753 CAPLUS
DN 108:131753
TI Synthesis of 3-alkyl-6-phenyl-4(3H)-pteridinones and their 8-oxides. Potential substrates of xanthine oxidase
AU De Meester, J. W. G.; Kraus, W.; Van der Plas, H. C.; Brons, H. J.; Middelhoven, W. J.
CS Dep. Org. Chem., Wageningen Agric. Univ., Wageningen, 6703 BC, Neth.
SO Journal of Heterocyclic Chemistry (1987), 24(4), 1109-16
CODEN: JHTCAD; ISSN: 0022-152X
DT Journal
LA English
OS CASREACT 108:131753

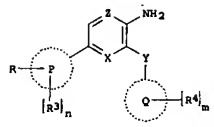
L7 ANSWER 20 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1988:112044 CAPLUS
DN 108:112044
TI The use of immobilized enzymes and bacterial cells in organic synthesis. Part 16. The oxidation of 6- and 7-aryl-4(3H)-pteridinones by immobilized Arthrobacter M-4 cells containing xanthine oxidase
AU De Meester, Johan W. G.; Van der Plas, Henk C.; Middelhoven, Wouter J.
CS Dep. Org. Chem., Wageningen, 6703 BC, Neth.
SO Journal of Heterocyclic Chemistry (1987), 24(2), 441-51
CODEN: JHTCAD; ISSN: 0022-152X
DT Journal
LA English
OS CASREACT 108:112044

=> D 16-20 IBIB ABS HITSTR

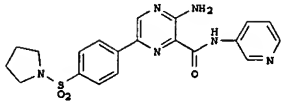
L7 ANSWER 16 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:42250 CAPLUS
DOCUMENT NUMBER: 138:106712
TITLE: Preparation of pyrazine-2-carboxamides as glycogen synthase kinase-3 (GSK3) inhibitors
INVENTOR(S): Berg, Stefan; Hellberg, Sven
PATENT ASSIGNEE(S): Astrazeneca AB, Swed.
SOURCE: PCT Int. Appl., 158 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003004472	A1	20030116	WO 2002-SE1339	20020703
WO 2003004472	C1	20030313		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2452686	AA	20030116	CA 2002-2452686	20020703
EP 1414801	A1	20040506	EP 2002-747795	20020703
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
BR 2002010838	A	20040713	BR 2002-10838	20020703
CN 1551869	A	20041201	CN 2002-813545	20020703
JP 2005505515	T2	20050224	JP 2003-510640	20020703
HU 200500339	A2	20050728	HU 2005-339	20020703
US 2006052396	A1	20060309	US 2003-481721	20031222
ZA 2003009977	A	20050323	ZA 2003-9977	20031223
NO 2004000014	A	20040302	NO 2004-14	20040102
PRIORITY APPLN. INFO.:			SE 2001-2439 A	20010705
			WO 2002-SE1339 W	20020703

OTHER SOURCE(S): MARPAT 138:106712
GI



I

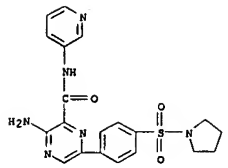


II

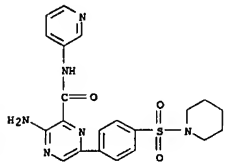
AB The title compds. [I; Z = CH, N; Y = CONR5, NR5CO, SO2NR5, etc.; X = CH, N; P = Ph or 5-6 membered heteroaryl which may optionally be fused with 5-6 membered (un)saturated ring containing one or more atoms selected from C, N, O or S; Q = Ph or 5-6 membered heteroaryl containing one or more heteroatoms selected from N, O or S of which at least one atom is selected from N atom; R = CHO, OCH2F, OCHF2, OCF3, etc.; R3, R4 = halo, NO2, CHO, etc.; n, m = 0-4], useful in the prevention and/or treatment of conditions associated with glycogen synthase kinase-3, were prepared and formulated. Thus, coupling 3-amino-6-bromo-N-(pyridin-3-yl)pyrazine-2-carboxamide with 4-(pyrrolidin-1-ylsulfonyl)phenylboronic acid (prepns. given) in the presence of Pd(dppf)Cl2 and Na2CO3 in dimethoxyethane afforded 93% the carboxamide II. Typical Ki values for the compds. I are in the range of about 0.001 to about 10,000 nM.

IT *486423-10-3P*, 3-Amino-N-(pyridin-3-yl)-6-[4-((pyrrolidin-1-yl)sulfonyl)phenyl]pyrazine-2-carboxamide *486423-11-4P*, 3-Amino-6-[4-((piperidin-1-yl)sulfonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-12-5P*, 3-Amino-6-[3-ethyl-4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-13-6P*, 3-Amino-6-[4-[(4-methylpiperazin-1-yl)sulfonyl]-3-(trifluoromethoxy)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-15-8P*, 3-Amino-N-[5-[3-(dimethylamino)propyl]pyridin-3-yl]-6-[4-(piperidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide *486424-07-1P* *486424-20-8P*
RL: CPS (Chemical process); PAC (Pharmacological activity); PEP (Physical, engineering or chemical process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(preparation of pyrazine-2-carboxamides as glycogen synthase kinase-3 (GSK3) inhibitors)

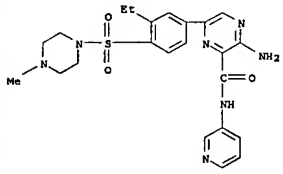
RN 486423-10-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



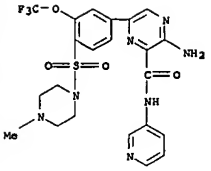
RN 486423-11-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-(1-piperidinylsulfonyl)phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



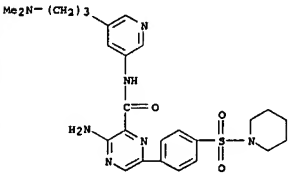
RN 486423-12-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-ethyl-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



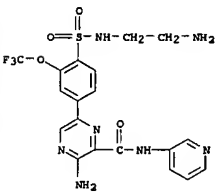
RN 486423-13-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]-3-(trifluoromethoxy)phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



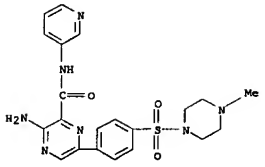
RN 486423-15-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[5-[3-(dimethylamino)propyl]-3-pyridinyl]-6-[4-(1-piperidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



RN 486424-07-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(2-aminoethyl)amino]sulfonyl]-3-(trifluoromethoxy)phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

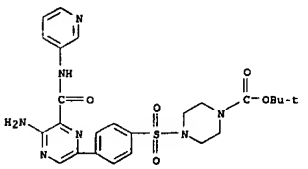


RN 486424-20-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

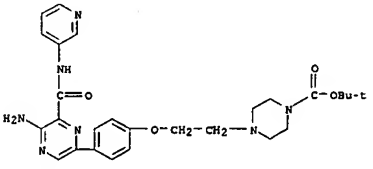


IT *486423-14-7P*, tert-Butyl 4-[(4-[5-amino-6-(((pyridin-3-yl)amino)carbonyl)pyrazin-2-yl]phenyl)sulfonyl]piperazine-1-carboxylate *486423-78-3P 486423-80-7P 486424-13-9P*
RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)
(preparation of pyrazine-2-carboxamides as glycogen synthase kinase-3 (GSK3) inhibitors)

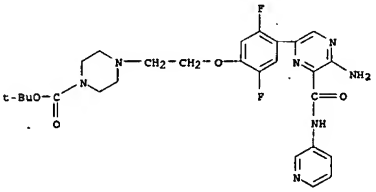
RN 486423-14-7 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[[4-[5-amino-6-[(3-pyridinylamino)carbonyl]pyrazinyl]phenyl]sulfonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



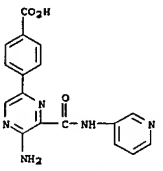
RN 486423-78-3 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[2-[4-[5-amino-6-[(3-pyridinylamino)carbonyl]pyrazinyl]phenoxy]ethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 486423-80-7 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[2-[4-[5-amino-6-[(3-pyridinylamino)carbonyl]pyrazinyl]-2,5-difluorophenoxy]ethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 486424-13-9 CAPLUS
CN Benzoic acid, 4-[5-amino-6-[(3-pyridinylamino)carbonyl]pyrazinyl]- (9CI) (CA INDEX NAME)



IT *486423-16-9P*, 3-Amino-N-[5-[3-(dimethylamino)propyl]pyridin-3-yl]-6-(4-(pyrrolidin-1-ylsulfonyl)phenyl]pyrazine-2-carboxamide *486423-17-0P*, 3-Amino-N-[4-[(dimethylamino)methyl]pyridin-3-yl]-6-[4-[(dimethylamino)sulfonyl]phenyl]pyrazine-2-carboxamide *486423-18-1P*, 3-Amino-N-[4-[3-(dimethylamino)propyl]pyridin-3-yl]-6-[4-[(dimethylamino)sulfonyl]phenyl]pyrazine-2-carboxamide *486423-19-2P*, 3-Amino-6-(4-[[N-methyl-N-(1-methylpyrrolidin-3-yl)amino]sulfonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-20-5P*, 3-Amino-6-(4-[[N-methyl-N-(1-methylpiperidin-4-yl)amino]sulfonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-21-6P*, 3-Amino-6-(4-[[N-[3-(dimethylamino)propyl]-N-methylamino]sulfonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide hydrochloride *486423-22-7P*, 3-Amino-6-(4-[[3-(dimethylamino)pyrrolidin-1-yl]sulfonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-23-8P*, 3-Amino-6-[4-((morpholin-4-yl)sulfonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-24-9P 486423-25-0P*, 3-Amino-6-[4-[(4-ethylpiperazine-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-26-1P 486423-27-2P 486423-28-3P 486423-29-4P*, 3-Amino-6-[4-[[N-isopropyl-N-(2-methoxyethyl)amino]sulfonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide hydrochloride *486423-30-7P 486423-31-8P 486423-32-9P*, 3-Amino-N-(pyridin-3-yl)-6-(4-[[(2-(pyridin-2-yl)ethyl)amino]sulfonyl]phenyl)pyrazine-2-carboxamide *486423-33-0P*, 3-Amino-6-(4-[[(2-methoxy-1-methylethyl)amino]sulfonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide hydrochloride *486423-34-1P*,

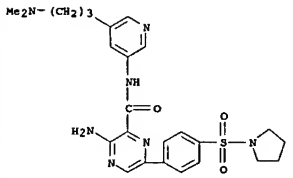
3-Amino-6-[4-([[2-(dimethylamino)-1-methylethyl]amino]sulfonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-35-2P*, 3-Amino-N-(pyridin-3-yl)-6-(4-[[(3-(pyrrolidin-1-yl)propyl]amino]sulfonyl]phenyl)pyrazine-2-carboxamide *486423-36-3P*, 6-[4-[(4-Acetylpiperazin-1-yl)sulfonyl]phenyl]-3-amino-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-37-4P* *486423-38-5P* *486423-40-9P*, 3-Amino-6-(4-[[N-[2-(dimethylamino)ethyl]-N-ethylamino]carbonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-41-0P*, 3-Amino-6-(4-[[N-[3-(dimethylamino)propyl]-N-methylamino]carbonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-42-1P*, 3-Amino-6-(4-([[3-(dimethylamino)propyl]amino]carbonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-43-2P*, 3-Amino-N-(pyridin-3-yl)-6-(4-[[(2-(pyrrolidin-1-yl)ethyl)amino]carbonyl]phenyl)pyrazine-2-carboxamide *486423-44-3P*, 3-Amino-N-(pyridin-3-yl)-6-(4-[[(3-(pyrrolidin-1-yl)propyl)amino]carbonyl]phenyl)pyrazine-2-carboxamide *486423-45-4P*, 3-Amino-6-[4-[(4-methyl-1,4-diazepan-1-yl)carbonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-46-5P*, 3-Amino-6-(4-[[N-methyl-N-(1-methylpyrrolidin-3-yl)amino]carbonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-47-6P*, 3-Amino-6-[4-[[[2-(dimethylamino)ethyl]amino]carbonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-48-7P*, 3-Amino-6-[4-([[2-(dimethylamino)-1-methylethyl]amino]carbonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-49-8P*, 3-Amino-6-[4-([3-(dimethylamino)pyrrolidin-1-yl]carbonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-50-1P*, 3-Amino-6-[4-([[(1-ethylpyrrolidin-2-yl)methyl]amino]carbonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-51-2P*, 3-Amino-6-[4-([[3-(4-methylpiperazin-1-yl)propyl]amino]carbonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-52-3P*, 3-Amino-6-(4-[[N-methyl-N-(1-methylpiperidin-4-yl)amino]carbonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-53-4P*, 3-Amino-6-(4-[[[2-(piperidin-1-yl)ethyl)amino]carbonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-54-5P*, 3-Amino-6-(4-[[(1-ethylpiperidin-3-yl)amino]carbonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-55-6P*, 3-Amino-6-[4-([[2-(1-methylpyrrolidin-2-yl)ethyl]amino]carbonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-56-7P*, 3-Amino-N-(pyridin-3-yl)-6-[4-[(4-(pyrrolidin-1-yl)piperidin-1-yl]carbonyl]phenyl]pyrazine-2-carboxamide *486423-58-9P* *486423-59-0P* *486423-60-3P* *486423-61-4P* *486423-62-5P* *486423-63-6P* *486423-64-7P* *486423-65-8P* *486423-66-9P* *486423-67-0P* *486423-68-1P* *486423-69-2P* *486423-70-5P*, 3-Amino-6-[4-[2-(4-methyl-1-piperazinyl)ethoxy]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-71-6P*, 3-Amino-6-[4-[[[2-(4-morpholinyl)ethyl]amino]carbonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-72-7P*, 3-Amino-6-[4-[(1-methylpyrrolidin-3-yl)oxy]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-73-8P* *486423-74-9P* *486423-75-0P* *486423-76-1P* *486423-77-2P* *486423-79-4P* *486423-81-8P* *486423-82-9P* *486423-83-0P* *486423-84-1P* *486423-85-2P*, 3-Amino-6-[5-[(dimethylamino)sulfonyl]thien-2-yl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486423-86-3P*, tert-Butyl 4-((5-(5-amino-6-[((pyridin-3-yl)amino)carbonyl]pyrazin-2-yl]furan-2-yl)carbonyl)piperazine-1-carboxylate *486423-88-5P* *486423-89-6P* *486423-90-9P* *486423-91-0P* *486423-92-1P* *486423-93-2P* *486423-94-3P* *486423-95-4P* *486423-96-5P* *486423-97-6P* *486423-98-7P* *486423-99-8P* *486424-00-4P* *486424-01-5P* *486424-04-8P* *486424-05-9P* *486424-06-0P* *486424-08-2P* *486424-09-3P* *486424-10-6P* *486424-12-8P* *486424-14-0P*, 3-Amino-6-[4-[(dimethylamino)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-15-1P*, 3-Amino-6-[3-[(dimethylamino)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-16-2P*, 3-Amino-6-[2-[(dimethylamino)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-17-3P*, 3-Amino-6-[4-(aminosulfonyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-19-5P*, 3-Amino-6-(4-[[(3-(morpholin-4-yl)propyl)amino]sulfonyl]phenyl)-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-21-9P* *486424-22-0P*, 3-Amino-6-[2,5-difluoro-4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-23-1P*, 3-Amino-6-[3-fluoro-4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-24-2P*, 3-Amino-6-[3-methyl-4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-25-3P*, 3-Amino-6-[2-[(4-methylpiperazin-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-26-4P*, 3-Amino-6-[3-[(4-methylpiperazin-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-27-5P*, 3-Amino-6-[2-methyl-4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-28-6P*, 3-Amino-6-[4-([[2-(dimethylamino)ethyl]amino]sulfonyl)-3-(trifluoromethoxy)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-29-7P*, 3-Amino-6-[4-[[N-[2-(dimethylamino)ethyl]-N-ethylamino]sulfonyl]-3-(trifluoromethoxy)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-30-0P*, 3-Amino-6-[4-[(4-methylpiperazin-1-yl)sulfonyl]-2-(trifluoromethyl)phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-31-1P*, 3-Amino-6-[4-[2-(dimethylamino)ethoxy]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-32-2P*, 3-Amino-6-[4-[2-(4-morpholinyl)ethoxy]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-33-3P*, 3-Amino-6-[4-[[N-[2-(dimethylamino)ethyl]-N-methylamino]carbonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide *486424-34-4P*, 3-Amino-6-[2,5-difluoro-4-((pyrrolidin-1-yl)sulfonyl]phenyl]-N-[5-(3-(pyrrolidin-1-yl)propyl)pyridin-3-yl]pyrazine-2-carboxamide *486424-40-2P*, tert-Butyl [2-[[(4-[5-amino-6-[((pyridin-3-yl)amino)carbonyl]pyrazin-2-yl]phenyl)sulfonyl]-N-(tert-butoxycarbonyl)amino]ethyl]carbamate *486424-41-3P* *486424-42-4P* *486424-43-5P*, 3-Amino-6-[2-fluoro-4-[(4-methylpiperazin-1-yl)sulfonyl]phenyl]-N-(pyridin-3-yl)pyrazine-2-carboxamide

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of pyrazine-2-carboxamides as glycogen synthase kinase-3 (GSK3) inhibitors)

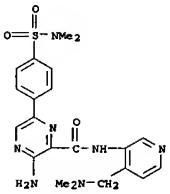
RN 486423-16-9 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-[5-[3-(dimethylamino)propyl]-3-pyridinyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]- (9CI) (CA INDEX NAME)



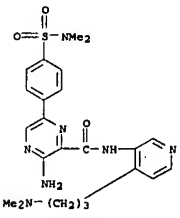
RN 486423-17-0 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-[4-[(dimethylamino)methyl]-3-pyridinyl]-6-[4-[(dimethylamino)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



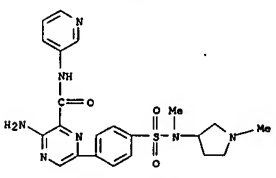
RN 486423-18-1 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-[4-[3-(dimethylamino)propyl]-3-pyridinyl]-6-[4-[(dimethylamino)sulfonyl]phenyl]- (9CI) (CA INDEX NAME)



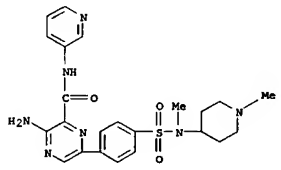
RN 486423-19-2 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[4-[[methyl(1-methyl-3-pyrrolidinyl)amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



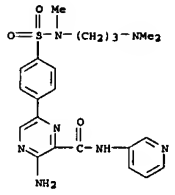
RN 486423-20-5 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[4-[(methyl(1-methyl-4-piperidinyl)amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



RN 486423-21-6 CAPLUS

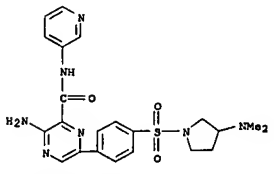
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[3-(dimethylamino)propyl]methylamino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)



● HCl

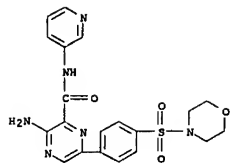
RN 486423-22-7 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[4-[[3-(dimethylamino)-1-pyrrolidinyl]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

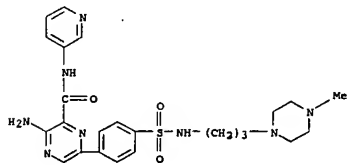


RN 486423-23-8 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-[4-(4-morpholinylsulfonyl)phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

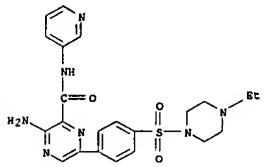


RN 486423-24-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[3-(4-methyl-1-piperazinyl)propyl]amino]sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)

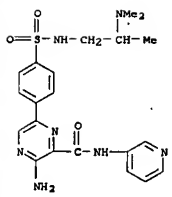


●x HCl

RN 486423-25-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-ethyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

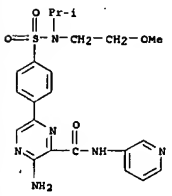


RN 486423-26-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[[[2-(1-pyrrolidinyl)ethyl]amino]sulfonyl]phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



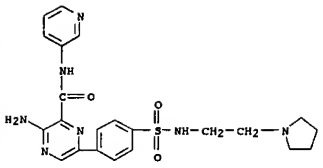
●x HCl

RN 486423-29-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(2-methoxyethyl)(1-methylethyl)amino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)



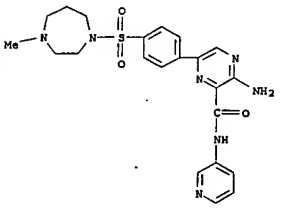
● HCl

RN 486423-30-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[(1-ethyl-2-pyrrolidinyl)methyl]amino]sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



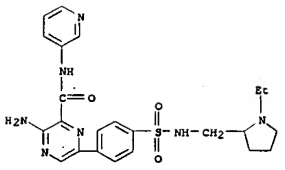
●x HCl

RN 486423-27-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(hexahydro-4-methyl-1H-1,4-diazepin-1-yl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



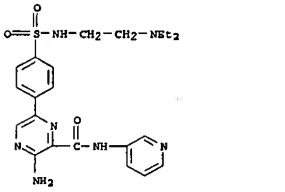
●x HCl

RN 486423-28-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)propyl]amino]sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



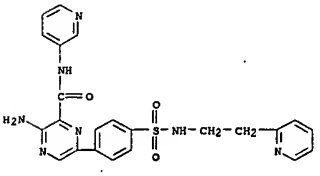
●x HCl

RN 486423-31-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(diethylamino)ethyl]amino]sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)

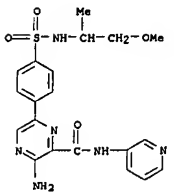


●x HCl

RN 486423-32-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[[[2-(2-pyridinyl)ethyl]amino]sulfonyl]phenyl]- (9CI) (CA INDEX NAME)

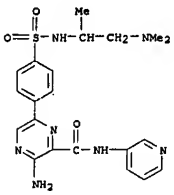


RN 486423-33-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(2-methoxy-1-methylethyl)amino]sulfonyl]phenyl]-N-3-pyridinyl-, monohydrochloride (9CI) (CA INDEX NAME)

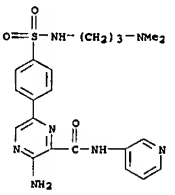


● HCl

RN 486423-34-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)-1-methylethyl]amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

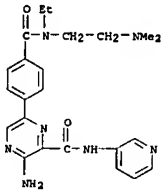


RN 486423-35-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[[[3-(1-pyrrolidinyl)propyl]amino]sulfonyl]phenyl]- (9CI) (CA INDEX NAME)

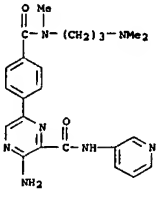


●x HCl

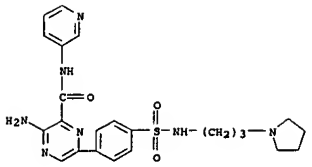
RN 486423-40-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]ethylamino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



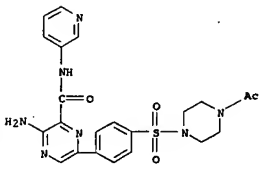
RN 486423-41-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[3-(dimethylamino)propyl]methylamino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



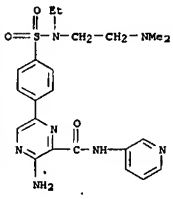
RN 486423-42-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[3-(dimethylamino)propyl]amino]carbony



RN 486423-36-3 CAPLUS
CN Pyrazinecarboxamide, 6-[4-[(4-acetyl-1-piperazinyl)sulfonyl]phenyl]-3-amino-N-3-pyridinyl- (9CI) (CA INDEX NAME)



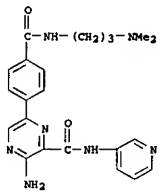
RN 486423-37-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]ethylamino]sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



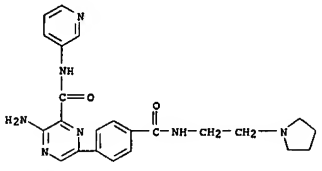
●x HCl

RN 486423-38-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[3-(dimethylamino)propyl]amino]sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)

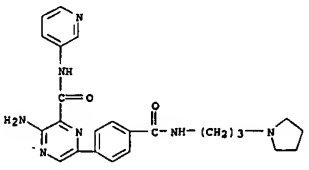
l]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



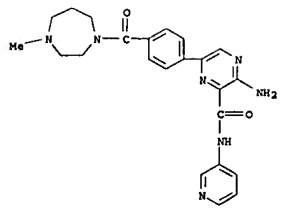
RN 486423-43-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[[[2-(1-pyrrolidinyl)ethyl]amino]carbonyl]phenyl]- (9CI) (CA INDEX NAME)



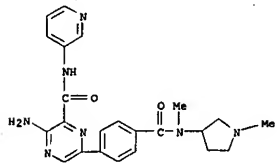
RN 486423-44-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[[[3-(1-pyrrolidinyl)propyl]amino]carbonyl]phenyl]- (9CI) (CA INDEX NAME)



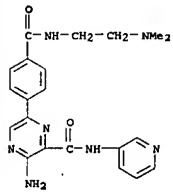
RN 486423-45-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(hexahydro-4-methyl-1H-1,4-diazepin-1-yl)carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



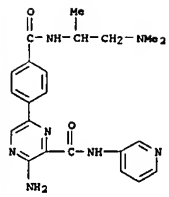
RN 486423-46-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[methyl(1-methyl-3-pyrrolidinyl)amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



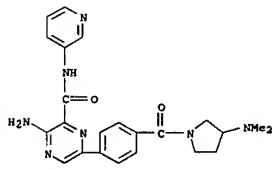
RN 486423-47-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



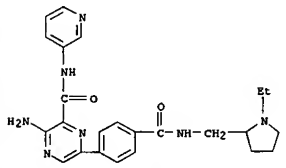
RN 486423-48-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)-1-methylethyl]amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



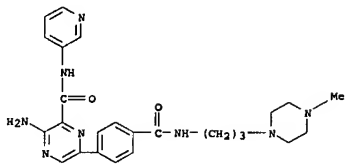
RN 486423-49-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[3-(dimethylamino)-1-pyrrolidinyl]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



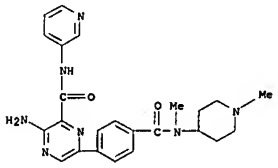
RN 486423-50-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[(1-ethyl-2-pyrrolidinyl)methyl]amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



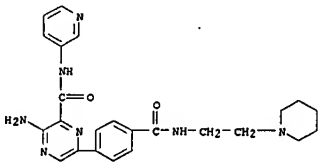
RN 486423-51-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[3-(4-methyl-1-piperazinyl)propyl]amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



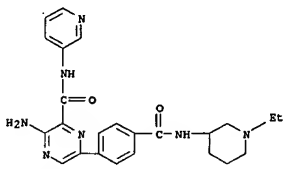
RN 486423-52-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[methyl(1-methyl-4-piperidinyl)amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



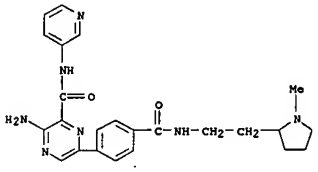
RN 486423-53-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(1-piperidinyl)ethyl]amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



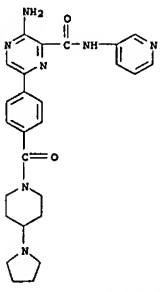
RN 486423-54-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(1-ethyl-3-piperidinyl)amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



RN 486423-55-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(1-methyl-2-pyrrolidinyl)ethyl]amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

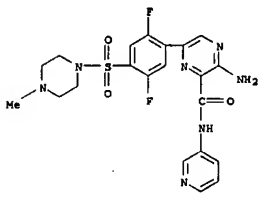


RN 486423-56-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[[4-(1-pyrrolidinyl)-1-piperidinyl]carbonyl]phenyl]- (9CI) (CA INDEX NAME)



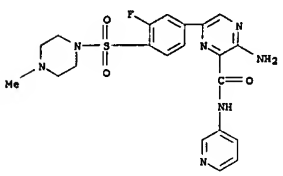
RN 486423-58-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-[(4-methyl-1-

piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



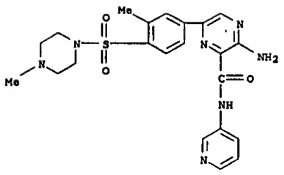
●x HCl

RN 486423-59-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-fluoro-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



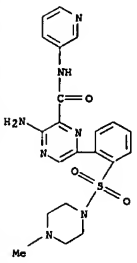
●x HCl

RN 486423-60-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-methyl-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



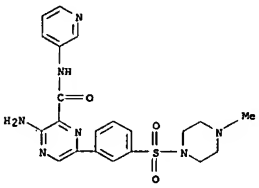
●x HCl

RN 486423-61-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



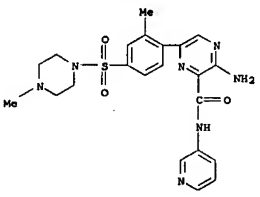
●x HCl

RN 486423-62-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



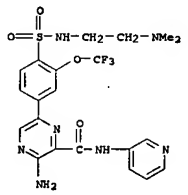
●x HCl

RN 486423-63-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2-methyl-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



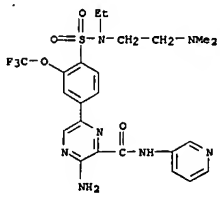
●x HCl

RN 486423-64-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]amino]sulfonyl]-3-(trifluoromethoxy)phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



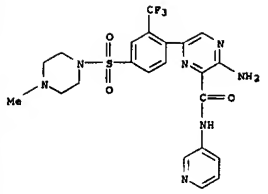
●x HCl

RN 486423-65-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]ethylamino]sulfonyl]-3-(trifluoromethoxy)phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



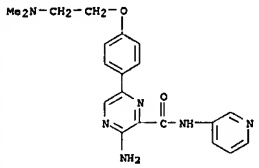
●x HCl

RN 486423-66-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]-2-(trifluoromethyl)phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



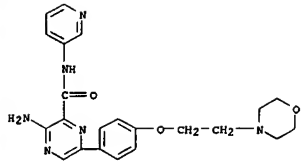
●x HCl

RN 486423-67-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[2-(dimethylamino)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



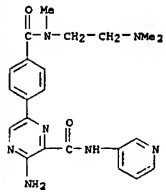
●x HCl

RN 486423-68-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[2-(4-morpholinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



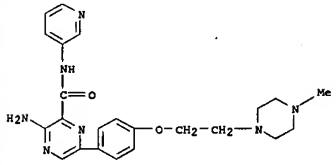
●x HCl

RN 486423-69-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]methylamino]carbonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)

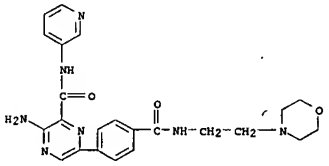


●x HCl

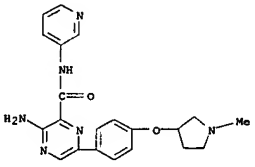
RN 486423-70-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[2-(4-methyl-1-piperazinyl)ethoxy]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



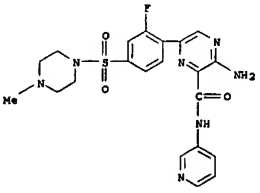
RN 486423-71-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(4-morpholinyl)ethyl]amino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



RN 486423-72-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(1-methyl-3-pyrrolidinyl)oxy]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

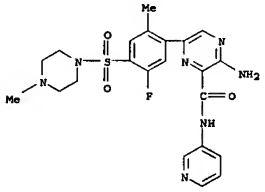


RN 486423-73-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2-fluoro-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



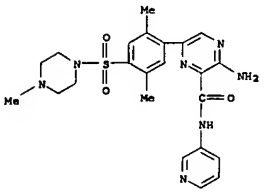
●x HCl

RN 486423-74-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[5-fluoro-2-methyl-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



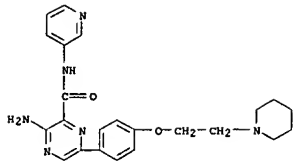
●x HCl

RN 486423-75-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-dimethyl-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



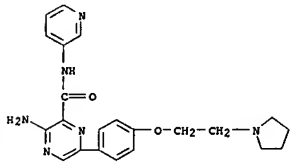
●x HCl

RN 486423-76-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[2-(1-piperidinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



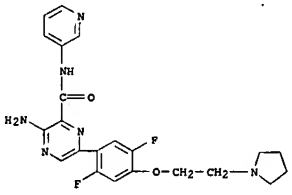
●x HCl

RN 486423-77-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-[2-(1-pyrrolidinyl)ethoxy]phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



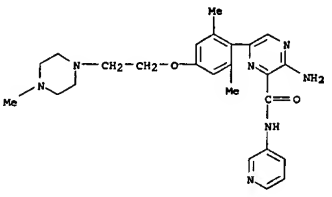
●x HCl

RN 486423-79-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)carbonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



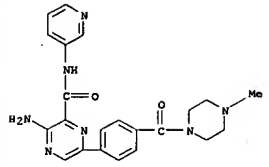
●x HCl

RN 486423-83-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,6-dimethyl-4-[2-(4-methyl-1-piperazinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



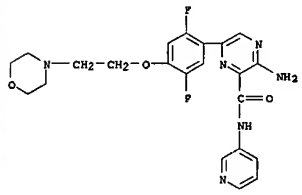
●x HCl

RN 486423-84-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2-methyl-4-[2-(4-methyl-1-piperazinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



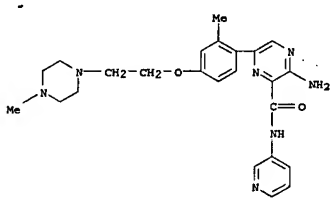
●x HCl

RN 486423-81-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-[2-(4-morpholinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



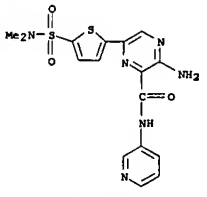
●x HCl

RN 486423-82-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-[2-(1-pyrrolidinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)

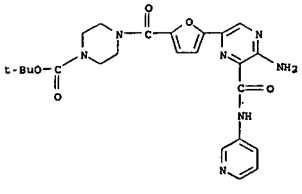


●x HCl

RN 486423-85-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[5-[(dimethylamino)sulfonyl]-2-thienyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

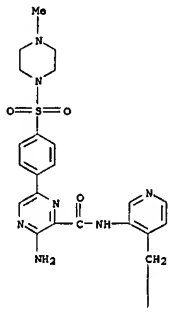


RN 486423-86-3 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[[5-[5-amino-6-[(3-pyridinylamino)carbonyl]pyrazinyl]-2-furanyl]carbonyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)



RN 486423-88-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-[4-(1-pyrrolidinylmethyl)-3-pyridinyl]-, hydrochloride (9CI) (CA INDEX NAME)

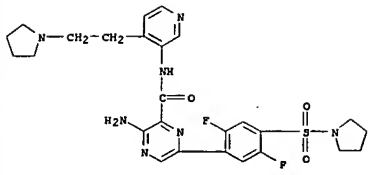
PAGE 1-A



PAGE 2-A

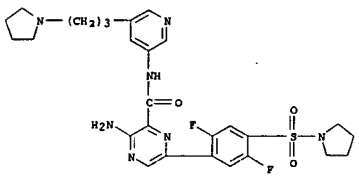
●x HCl

RN 486423-89-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-(1-pyrrolidinylsulfonyl)phenyl]-N-[4-[2-(1-pyrrolidinyl)ethyl]-3-pyridinyl]-, hydrochloride (9CI) (CA INDEX NAME)



●x HCl

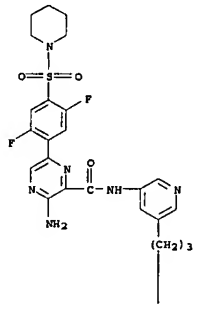
RN 486423-90-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-(1-pyrrolidinylsulfonyl)phenyl]-N-[5-[3-(1-pyrrolidinyl)propyl]-3-pyridinyl]-, hydrochloride (9CI) (CA INDEX NAME)



●x HCl

RN 486423-91-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-(1-piperidinylsulfonyl)phenyl]-N-[5-[3-(1-pyrrolidinyl)propyl]-3-pyridinyl]-, hydrochloride (9CI) (CA INDEX NAME)

PAGE 1-A

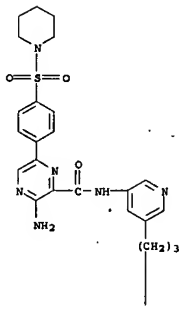


PAGE 2-A

●x HCl

RN 486423-92-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-(1-piperidinylsulfonyl)phenyl]-N-[5-[3-(1-pyrrolidinyl)propyl]-3-pyridinyl]-, hydrochloride (9CI) (CA INDEX NAME)

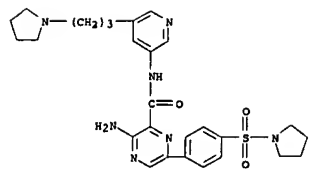
PAGE 1-A



PAGE 2-A

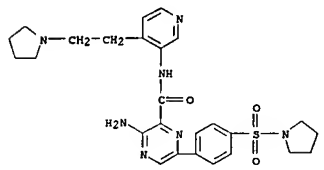
●x HCl

RN 486423-93-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[5-[3-(1-pyrrolidinyl)propyl]-3-pyridinyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



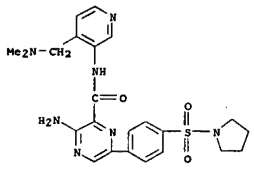
●x HCl

RN 486423-94-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[4-[2-(1-pyrrolidinyl)ethyl]-3-pyridinyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



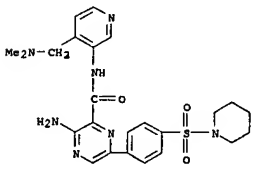
●x HCl

RN 486423-95-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[4-[3-(1-pyrrolidinyl)propyl]-3-pyridinyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



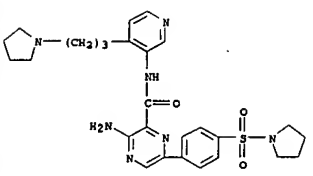
●x HCl

RN 486423-98-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[4-[(dimethylamino)methyl]-3-pyridinyl]-6-[4-(1-piperidinylsulfonyl)phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



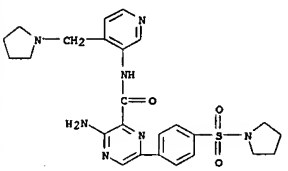
●x HCl

RN 486423-99-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-ethyl-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



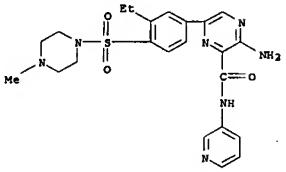
●x HCl

RN 486423-96-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[4-(1-pyrrolidinylmethyl)-3-pyridinyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



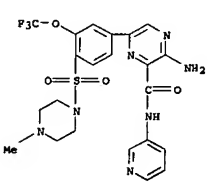
●x HCl

RN 486423-97-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[4-[(dimethylamino)methyl]-3-pyridinyl]-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



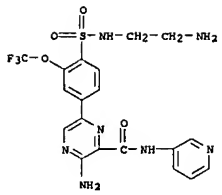
●x HCl

RN 486424-00-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]-3-(trifluoromethoxy)phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



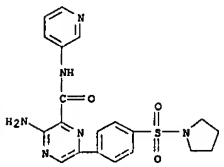
●x HCl

RN 486424-01-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[(2-aminoethyl)amino]sulfonyl]-3-(trifluoromethoxy)phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



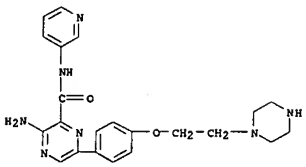
●x HCl

RN 486424-04-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-3-pyridinyl-6-[4-(1-pyrrolidinylsulfonyl)phenyl]-, hydrochloride (9CI) (CA INDEX NAME)



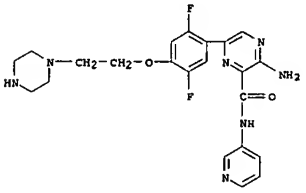
●x HCl

RN 486424-05-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-(1-piperidinylsulfonyl)phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



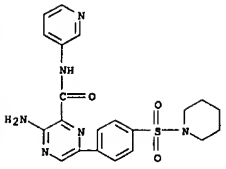
●x HCl

RN 486424-09-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-[2-(1-piperazinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



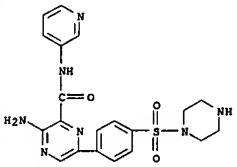
●x HCl

RN 486424-10-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[5-(1-piperazinylcarbonyl)-2-furanyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



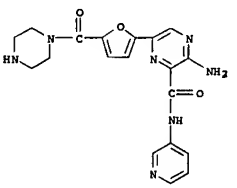
●x HCl

RN 486424-06-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-(1-piperazinylsulfonyl)phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



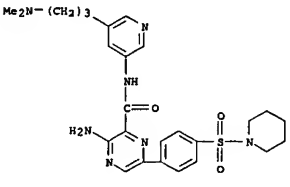
●x HCl

RN 486424-08-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[2-(1-piperazinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



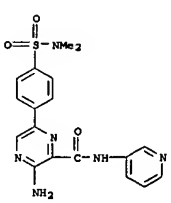
●x HCl

RN 486424-12-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[5-[3-(dimethylamino)propyl]-3-pyridinyl]-6-[4-(1-piperidinylsulfonyl)phenyl]-, hydrochloride (9CI) (CA INDEX NAME)

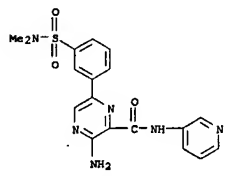


●x HCl

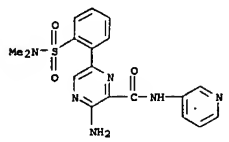
RN 486424-14-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(dimethylamino)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



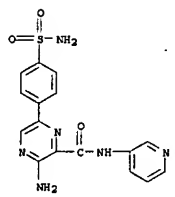
RN 486424-15-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-[(dimethylamino)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



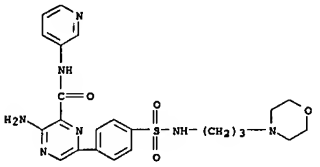
RN 486424-16-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2-[(dimethylamino)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



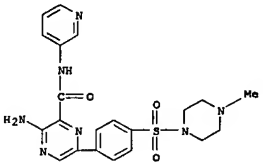
RN 486424-17-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-(aminosulfonyl)phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



RN 486424-19-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[3-(4-morpholinyl)propyl]amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

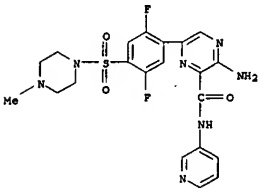


RN 486424-21-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)

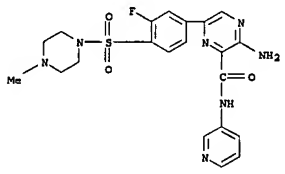


●x HCl

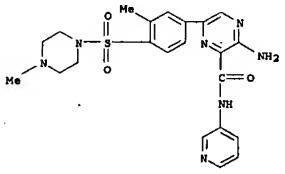
RN 486424-22-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



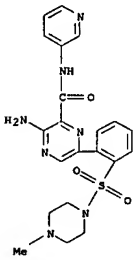
RN 486424-23-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-fluoro-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



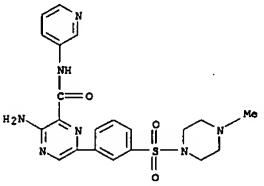
RN 486424-24-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-methyl-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



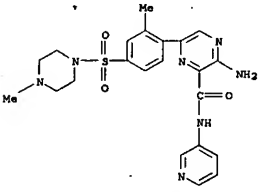
RN 486424-25-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



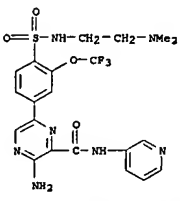
RN 486424-26-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[3-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



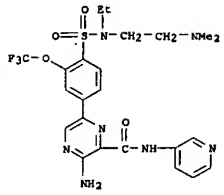
RN 486424-27-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2-methyl-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



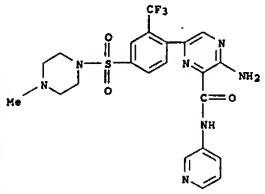
RN 486424-28-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]amino]sulfonyl]-3-(trifluoromethoxy)phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



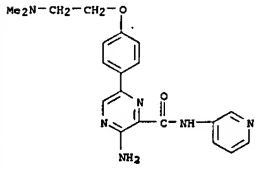
RN 486424-29-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]ethylamino]sulfonyl]-3-(trifluoromethoxy)phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



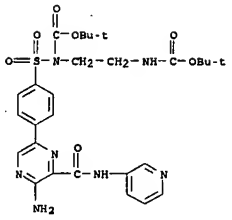
RN 486424-30-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(4-methyl-1-piperazinyl)sulfonyl]-2-(trifluoromethyl)phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



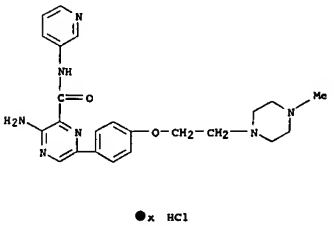
RN 486424-31-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[2-(dimethylamino)ethoxy]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



RN 486424-32-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[2-(4-morpholinyl)ethoxy]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

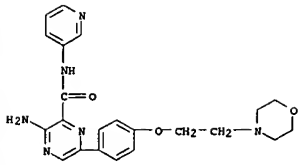


RN 486424-41-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[2-(4-methyl-1-piperazinyl)ethoxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)

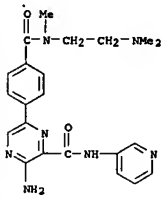


●x HCl

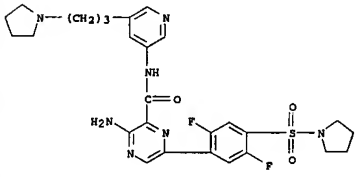
RN 486424-42-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[(1-methyl-3-pyrrolidinyl)oxy]phenyl]-N-3-pyridinyl-, hydrochloride (9CI) (CA INDEX NAME)



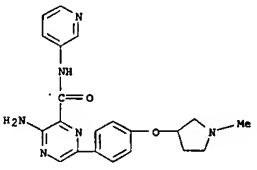
RN 486424-33-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]methylamino]carbonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



RN 486424-34-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2,5-difluoro-4-(1-pyrrolidinylsulfonyl)phenyl]-N-[5-[3-(1-pyrrolidinyl)propyl]-3-pyridinyl]- (9CI) (CA INDEX NAME)

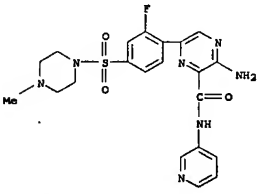


RN 486424-40-2 CAPLUS
CN Carbamic acid, [[4-[5-amino-6-[(3-pyridinylamino)carbonyl]pyrazinyl]phenyl]sulfonyl][2-[[(1,1-dimethylethoxy)carbonyl]amino]ethyl]-, 1,1-dimethylethyl ester (9CI) (CA INDEX NAME)

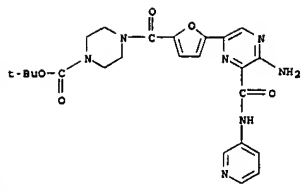


●x HCl

RN 486424-43-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[2-fluoro-4-[(4-methyl-1-piperazinyl)sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)

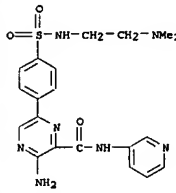


IT *486424-39-9*
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of pyrazine-2-carboxamides as glycogen synthase kinase-3 (GSK3) inhibitors)
RN 486424-39-9 CAPLUS
CN 1-Piperazinecarboxylic acid, 4-[[5-[5-amino-6-[(3-pyridinylamino)carbonyl]pyrazinyl]-2-furanyl]carbonyl]-, 1,1-dimethylethyl ester, hydrochloride (9CI) (CA INDEX NAME)



●x HCl

IT *486422-09-7P*, 3-Amino-6-[4-([[2-(dimethylamino)ethyl]amino]sulfonyl)phenyl]-N-pyridin-3-ylpyrazine-2-carboxamide
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of pyrazine-2-carboxamides as glycogen synthase kinase-3 (GSK3) inhibitors)
RN 486422-09-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-[4-[[[2-(dimethylamino)ethyl]amino]sulfonyl]phenyl]-N-3-pyridinyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 17 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:466012 CAPLUS
DOCUMENT NUMBER: 137:47228
TITLE: Preparation of spiro[isobenzofuran-1,4'-piperidin]-3-ones and 3H-spiroisobenzofuran-1,4'-piperidines as NPY5 receptor activity modulators
INVENTOR(S): Bakthavatchalam, Rajagopal; Blum, Charles A.; Brielmann, Harry L.; Darrow, James William; De Lombaert, Stephane; Hutchison, Alan; Tran, Jennifer; Zheng, Xiaozhang; Elliott, Richard Louis; Hammond, Marlys
PATENT ASSIGNEE(S): Neurogen Corporation, USA; Pfizer Inc.
SOURCE: PCT Int. Appl., 134 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002048152	A2	20020620	WO 2001-US47863	20011211
WO 2002048152	A3	20030508		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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US 2003036652	A1	20030220	US 2001-13846	20011211
US 6566367	B2	20030520		
EP 1347982	A2	20031001	EP 2001-270536	20011211
EP 1347982	B1	20051116		
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ES 2249384	T3	20060401	ES 2001-1270536	20011211
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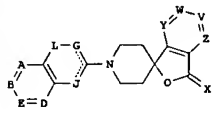
US 6943199	B2	20050913		
US 2005033048	A1	20050210	US 2003-415457	20030815
US 2006040964	A1	20060223	US 2005-183615	20050718

PRIORITY APPLN. INFO.:

US 2000-254990P	P	20001212
EP 2001-270536	A3	20011211
US 2001-13846	A3	20011211
WO 2001-US47863	W	20011211
US 2003-410648	A3	20030409

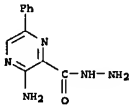
OTHER SOURCE(S): MARPAT 137:47228
GI



I

AB Title compds. [I; X = O, H2; A, D, V, W, Y, Z independently = N, CR1; R1 = H, halo, OH, NH2, NO2, CN, CONH2, COOH; B = N, CR2; E = CR3; R2, R3 independently = H, halo, OH, NH2, NO2, CN, CONH2, COOH; G = N, NH; J = NH, N; L = bond, CO; dotted bond = single, double] capable of modulating NPY5 receptor activity are prepared Such compds. may be used to modulate ligand binding to NPY5 receptors in vivo or in vitro, and are particularly useful in the treatment of a variety of disorders (e.g., eating disorders such as obesity or bulimia, psychiatric disorders, diabetes and cardiovascular disorders such as hypertension) in humans, domesticated companion animals and livestock animals. Pharmaceutical compns. and method for treating such disorders are provided, as are methods for using such compds. for detecting NPY5 receptors.

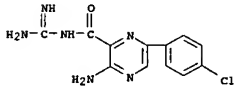
IT *438190-84-2P*
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of spiro[isobenzofuran-1,4'-piperidin]-3-ones and 3H-spiroisobenzofuran-1,4'-piperidines as NPY5 receptor activity modulators)
RN 438190-84-2 CAPLUS
CN Pyrazinecarboxylic acid, 3-amino-6-phenyl-, hydrazide (9CI) (CA INDEX NAME)



L7 ANSWER 18 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:590066 CAPLUS
DOCUMENT NUMBER: 127:257127
TITLE: Structural requirements for potent Na/H exchange inhibitors obtained from quantitative structure-activity relationships monocyclic and bicyclic aroylguanidines
AUTHOR(S): Yamamoto, Takeshi; Hori, Manabu; Watanabe, Ikuo; Tsutsui, Hisayoshi; Harada, Kengo; Ikeda, Shoji; Ohtaka, Hiroshi
CORPORATE SOURCE: Product R and D Laboratory, Kanebo Ltd., Osaka, 534, Japan
SOURCE: Chemical & Pharmaceutical Bulletin (1997), 45(8), 1282-1286
CODEN: CPBTAL; ISSN: 0009-2363
PUBLISHER: Pharmaceutical Society of Japan
DOCUMENT TYPE: Journal
LANGUAGE: English

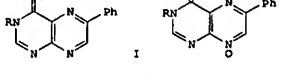
AB The quant. structure-activity relationship (QSAR) of N-(3-amino-6-chloro-5-ethylisopropylaminopyrazine-4-carbonyl)guanidine (EIPA) lac and its derivs. as Na/H exchange inhibitors was analyzed using the steric parameters and an indicator variable. The results indicated that bicyclic aroylguanidines might have Na/H exchange inhibitory activity. Therefore, various bicyclic aroylguanidines were synthesized and tested for Na/H exchange inhibitory activity. The QSAR study of the bicyclic aroylguanidines showed that hydrophobic bicyclic rings seemed to be preferable for potent activity. The hydrophobicity of the aroyl ring moiety was thought to be particularly important. Thus, the QSAR of EIPA and its derivs. was re-analyzed using hydrophobicity and steric parameters. The results indicated that high hydrophobicity of the pseudo-ring moiety and a substituent of appropriate length at the position corresponding to the 5-position of the naphthalene ring enhance the activity. As expected from the results, 5-bromo-2-naphthoylguanidine 3b and 5-methoxy-2-naphthoylguanidine 3c exhibited strong activity. These findings will be helpful to design new, potent Na/H exchange inhibitors.

IT *1634-17-9*
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(structure-activity relationships monocyclic and bicyclic aroylguanidines as Na/H exchange inhibitors)
RN 1634-17-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 19 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:131753 CAPLUS
DOCUMENT NUMBER: 108:131753
TITLE: Synthesis of 3-alkyl-6-phenyl-4(3H)-pteridinones and their 8-oxides. Potential substrates of xanthine oxidase
AUTHOR(S): De Meester, J. W. G.; Kraus, W.; Van der Plas, H. C.; Brons, H. J.; Middelhoven, W. J.
CORPORATE SOURCE: Dep. Org. Chem., Wageningen Agric. Univ., Wageningen, 6703 BC, Neth.
SOURCE: Journal of Heterocyclic Chemistry (1987), 24(4), 1109-16
CODEN: JHTCAD; ISSN: 0022-152X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 108:131753
GI



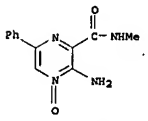
I II

AB Synthetic routes for the preparation of 3-alkyl-6-phenyl-4(3H)-pteridinones I (R = Me, Et, Pr, Bu, CHMe2, CHMeEt, CMe3, CH2CH2OH, CMe2CH2OH, CHEtCH2OH) and their corresponding 8-oxides II are described and their reactivities towards xanthine oxidase from Arthrobacter M-4 are determined Only I and II (R = Me) are found to be substrates although their reactivities are still very low. Oxidation takes place at C-2 of the pteridinone nucleus. All the 3-alkyl derivs. are less tightly bound to the enzyme than 6-phenyl-4(3H)-pteridinone (I; R = H). Introduction of the N-oxide at N-8 considerably lowers the binding of the substrates. Inhibition studies have revealed that 3-methyl-6-phenyl-4(3H)-pteridinone (I; R = Me) is a noncompetitive inhibitor with a Ki-value of 47 μM and the 3-Et derivative (I; R = Et) an uncompetitive one with a Ki-value of 19.6 μM.

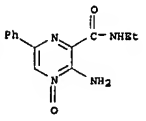
IT *113424-65-0P* *113424-66-1P* *113424-67-2P*
113424-68-3P *113424-69-4P* *113424-70-7P*
113424-74-1P *113424-75-2P* *113424-76-3P*
113424-77-4P *113424-78-5P* *113424-79-6P*
113424-80-9P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and cyclocondensation reaction of, with tri-Et orthoformate)

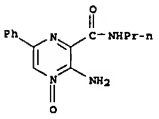
RN 113424-65-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-methyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



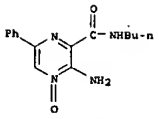
RN 113424-66-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-ethyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



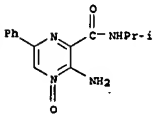
RN 113424-67-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-phenyl-N-propyl-, 4-oxide (9CI) (CA INDEX NAME)



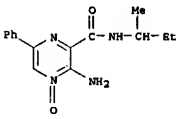
RN 113424-68-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-butyl-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



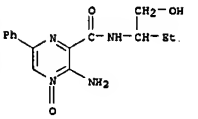
RN 113424-69-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(1-methylethyl)-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



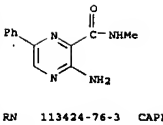
RN 113424-70-7 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(1-methylpropyl)-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



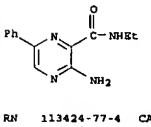
RN 113424-74-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-[1-(hydroxymethyl)propyl]-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



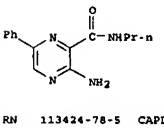
RN 113424-75-2 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-methyl-6-phenyl- (9CI) (CA INDEX NAME)



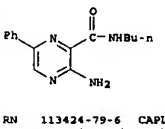
RN 113424-76-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-ethyl-6-phenyl- (9CI) (CA INDEX NAME)



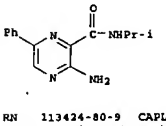
RN 113424-77-4 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-phenyl-N-propyl- (9CI) (CA INDEX NAME)



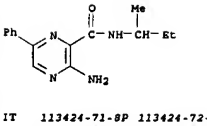
RN 113424-78-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-butyl-6-phenyl- (9CI) (CA INDEX NAME)



RN 113424-79-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(1-methylethyl)-6-phenyl- (9CI) (CA INDEX NAME)

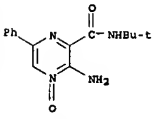


RN 113424-80-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(1-methylpropyl)-6-phenyl- (9CI) (CA INDEX NAME)

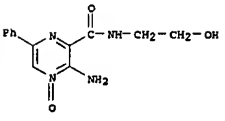


IT *113424-71-8P 113424-72-9P 113424-73-0P*
113424-81-0P 113424-82-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

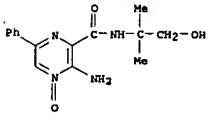
RN 113424-71-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(1,1-dimethylethyl)-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)



RN 113424-72-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(2-hydroxyethyl)-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)

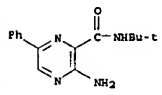


RN 113424-73-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(2-hydroxy-1,1-dimethylethyl)-6-phenyl-, 4-oxide (9CI) (CA INDEX NAME)

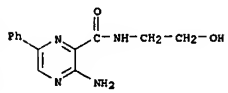


RN 113424-81-0 CAPLUS

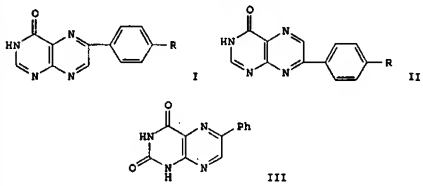
CN Pyrazinecarboxamide, 3-amino-N-(1,1-dimathylethyl)-6-phenyl- (9CI) (CA INDEX NAME)



RN 113424-82-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(2-hydroxyethyl)-6-phenyl- (9CI) (CA INDEX NAME)



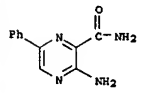
L7 ANSWER 20 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:112044 CAPLUS
DOCUMENT NUMBER: 108:112044
TITLE: The use of immobilized enzymes and bacterial cells in organic synthesis. Part 16. Tha oxidation of 6- and 7-aryl-4(3H)-pteridinones by immobilized Arthrobacter M-4 cells containing xanthine oxidase
AUTHOR(S): De Meester, Johan W. G.; Van der Plas, Henk C.; Middelhoven, Wouter J.
CORPORATE SOURCE: Dep. Org. Chem., Wageningen, 6703 BC, Neth.
SOURCE: Journal of Heterocyclic Chemistry (1987), 24(2), 441-51
CODEN: JHTCAD; ISSN: 0022-152X
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 108:112044
GI



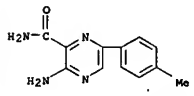
I II

III

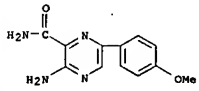
AB 6- And 7-(p-substituted phenyl)-4(3H)-pteridinones I and II (R = H, Me, MeO) were prepared The oxidation of thase compds. by immobilized Arthrobacter M-4 cells containing xanthine oxidase has been studied. Tha oxidation usually goes fast, except for II (R = Me, MeO) which are oxidized slowly. Small laboratory-scale oxidns. were carried out with bacterial calls immobilized in galatina crosslinked with glutaraldehyde. Based on spectral data tha products of the oxidation reactions are 6- and 7-aryllumazinas, e.g. III.
IT *113120-69-7P 113120-70-0P 113120-71-1P*
RL: SPN (Synthatic preparation); PREP (Preparation)
(preparation and cyclization with tri-Et orthoformate)
RN 113120-69-7 CAPLUS
CN Pyrazinecarboxamida, 3-amino-6-phenyl- (9CI) (CA INDEX NAME)



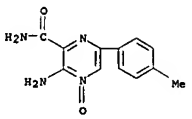
RN 113120-70-0 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-(4-methylphenyl)- (9CI) (CA INDEX NAME)



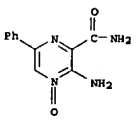
RN 113120-71-1 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-(4-methoxyphenyl)- (9CI) (CA INDEX NAME)



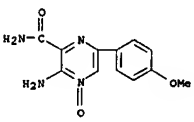
IT *113120-67-5P*
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 113120-67-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-(4-methylphenyl)-, 4-oxide (9CI) (CA INDEX NAME)



IT *19994-59-3P 113120-68-6P*
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation, reduction, and cyclization with tri-Et orthoformate)
RN 19994-59-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-phenyl-, 4-oxide (8CI, 9CI) (CA INDEX NAME)

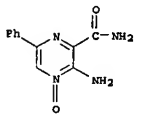


RN 113120-68-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-(4-methoxyphenyl)-, 4-oxide (9CI) (CA INDEX NAME)



=> D 21-25 IBIB ABS HITSTR

L7 ANSWER 21 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1973:537091 CAPLUS
DOCUMENT NUMBER: 79:137091
TITLE: Pteridines. XXVIII. New, general, and unaquivocal ptarin synthesis
AUTHOR(S): Taylor, Edward C.; Perlman, Katherine L.; Sword, Ian P.; Sequin-Fray, Margarata; Jacobi, Pater A.
CORPORATE SOURCE: Dep. Chem., Princeton Univ., Princeton, NJ, USA
SOURCE: Journal of the American Chemical Society (1973), 95(19), 6407-12
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB Pterins are prepared Reaction of an α-oxoaldoxime or a α-oxoketoxime with esters of α-aminocyanoacetic acid gives 2-amino-3-alkoxycarbonyl-pyrazine 1-oxides (I) which cyclized with guanidine to pterin 8-oxides (II). Deoxygenation of the I and II, and the conversion of II to 7,8-dihydropterins, are described.
IT *19994-59-3*
RL: RCT (Reactant); RACT (Reactant or reagent)
(cyclization of)
RN 19994-59-3 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-phenyl-, 4-oxide (8CI, 9CI) (CA INDEX NAME)



L7 ANSWER 22 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1971:88051 CAPLUS
DOCUMENT NUMBER: 74:88051
TITLE: Antiinflammatory arylhydroxypyrazine-and-pyrimidinecarboxylic acids
INVENTOR(S): Shen, Tsung-Ying; Walford, Gordon L.; Witzel, Bruce E.
PATENT ASSIGNEE(S): Merck and Co., Inc.
SOURCE: Ger. Offen., 64 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2031228	A	19710128	DE 1970-2031228	19700624
US 3660403	A	19720502	US 1969-836647	19690625
US 3745161	A	19730710	US 1970-30294	19700420
NL 7008625	A	19701229	NL 1970-8625	19700612
IL 34719	A1	19730829	IL 1970-34719	19700615
GB 1269484	A	19720406	GB 1970-1269484	19700618
ES 380932	A1	19730401	ES 1970-380932	19700619
BE 752456	A	19701224	BE 1970-752456	19700624
FR 2053012	A5	19710416	FR 1970-23325	19700624
FR 2053012	B1	19740524		
ZA 7004319	A	19720223	ZA 1970-4319	19700624
CH 537390	A	19730713	CH 1970-9656	19700625
PRIORITY APPLN. INFO.:			US 1969-836647 A	19690625
			US 1970-30294 A	19700420

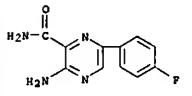
GI For diagram(s), see printed CA Issua.
AB The antiinflammatory titla compds. (I and II) wera prepared Thus,. reaction of H2NCOCH(NH2)C(:NH)NH2.2HCl with p-FC6H4COCHO gave I (R = R1 = NH2, p-FC6H4 in the 5-position), which was refluxad 8 hr in N NaOH to giva tha free acid (III). Reaction of III with H2SO4 (mathod A) gave the 2-hydroxy darivative, which was also prepared by heating 2-amino-6-(p-fluorophenyl)-4-hydroxyptaridina 24 hr with 4N NaOH at 170°. Similarly prepared by method A wera I (R = R1 = OH and p-FC6H4 in 6-position) and II (R = OH) (R1 and positions of COR and p-FC6H4) given): 5-OH, 4, 2 (IV); 4-OH, 5,

2. Refluxing IV 8 hr with MeOH and H2SO4 gave II (R = MeO, R1 = 5-OH, COR in 4-position, p-FC6H4 in 2-position), which on refluxing with MeI in MeONa and hydrolysis gave the 5-methoxy derivative Reaction of II (R = OEt, R1 = 4-OH, COR in 5-position, p-FC6H4 in 3-position) with POCl3-PCl5 gave the 4-chloro derivative, which on reaction with EtONa gave the 4-ethoxy derivative, which was hydrolyzed to give the free acid. Also prepared were 3 addnl. II, 2 addnl. I as well as Me 5-(p-aminophenyl)-2-hydroxy-3-pyrazinecarboxylate, Me 2-[p-(methylthio)phenyl]-4-hydroxy-5-pyrimidinecarboxylate, and 2-[p-(methylsulfinyl)phenyl]-5-acetoxypyrimidinecarboxylic acid.

IT *30838-86-9P*, Pyrazinecarboxamide, 3-amino-6-(p-fluorophenyl)-
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 30838-86-9 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-(4-fluorophenyl)- (9CI) (CA INDEX NAME)



L7 ANSWER 23 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1968:467334 CAPLUS

DOCUMENT NUMBER: 69:67334

TITLE: An unequivocal synthesis of 6-aubatituted-pteridine 8-oxides, pteridines, and 7,8-dihydropteridines

AUTHOR(S): Taylor, Edward C.; Lenard, Katherine

CORPORATE SOURCE: Princeton Univ., Princeton, NJ, USA

SOURCE: Journal of the American Chemical Society (1968), 90(9), 2424-5
CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

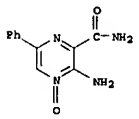
LANGUAGE: English

AB 6-Substituted pteridine 8-oxides, which are easily reduced to 7,8-dihydropteridines and subsequently oxidized to 6-substituted pteridines, are prepared by condensation of an RCH(CN)NH2 with an R1C(O)CH:NOH, followed by cyclization with guanidine.

IT *19994-59-3P*
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 19994-59-3 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-phenyl-, 4-oxide (8CI, 9CI) (CA INDEX NAME)



L7 ANSWER 24 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1968:436172 CAPLUS

DOCUMENT NUMBER: 69:36172

TITLE: (3-Amino-2-pyrazinecarbonyl)guanidines

INVENTOR(S): Cragoe, Edward J., Jr.

PATENT ASSIGNEE(S): Merck and Co., Inc.

SOURCE: U.S., 26 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3313813		19670411	US 1963-313315	19621030
DE 1795438			DE	

GI For diagram(s), aee printed CA Iaaue.

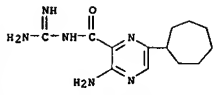
AB Title compds. I are prepared from II, III, and IV. Thus, 3318 g. SO2Cl2 is added in 30 min. to 765 g. Me 3-amino-2-pyrazinecarboxylate in 5.1 C6H6; the mixture is agitated 1 hr., refluxed 5 hrs., and agitated overnight to give 724 g. Me 3-amino-5,6-dichloropyrazinecarboxylate (V), m. 233-4° (MeCN). A mixture of 100 g. V, and 1.1 Me2SO is heated to 65° and NH3 gas is introduced into the mixture in 45 min. at 65-70°; the mixture is cooled to 10° and NH3 is introduced in 1.25 hrs. to give 91.5% Me 3,5-diamino-6-chloropyrazinecarboxylate, m. 212-13° (MeCN). Also prepared, by known methods are the following II (X, Y, Z, and m.p. given): MeO, NH2, H, 252-4° (decomposition); MeO, NH2, Br, 217-19°; MeO, NH2, iodine, 200-2°; MeO, PhNH, Cl, 171.5-73°; MeO, p-ClC6H4NH, Cl, 207-8°; MeO, Me2N, Cl, 145.5-6.5°; MeO, MeS, Cl, 214-16°; MeO, MeSO, Cl, 237.5-40.5° (decomposition); MeO, OH, Cl, .apprx.245° (decomposition); MeO, OH, H, 220-60° (decomposition); MeO, NH2,H, 252-4° (decompoaition); MeO, Me2N, H, 242.5-3.5°; MeO, MeO, H, 205.5-7.5°; MeO, PhCH2NH, H, 157-8°; MeO, MeO, MeO, Cl, 255-7°; MeO, MeS, Cl, 212-14°; MeO, SH, Cl, 207-8° (decompoaition); MeO,EtO, Cl, 123-5°; MeO, H, Me, 138.5-40.5°; MeO, Cl, Me, 176.5-9.5°; MeO, Me2N, Me, 108.5-10.5°; MeO, Me, H, 165-7°; MeO, Me, Br, 179-81°; NH2, H, Et, 165.5-8.5°; OH, H, Et, 149-52°; MeO, H, Et, 85-7.5°; OH, cyclohexyl, H, 182.5-3.5°; MeO, cyclohexyl, H, 173-4.5°; NH2, H, cyclohexyl, -; OH, H, cyclohexyl, -; MeO, H, cyclohexyl, 126.5-8.0°; NH2, H, cyclopropyl, 185.5-7.5°; OH, H, cyclopropyl, 169-72°; MeO, H, cyclohexyl, 112.5-14.5°; MeO, Ph, H, 231-2°; MeO, H, Ph, 140-1°; MeO, Cl, Ph, 187.5-91.5°; MeO, Ph, Br, 217-21°; OH, H, p-ClC6H4, 213-15°; MeO, H, p-ClC6H4, 181.5-3.5°; MeO, Cl, Ph, 187.5-90.5°; MeO, Me2N, Ph, 167-9.5°; MeO, H, Cl, 142° (decompoaition); MeO, MeHN, Cl, 221-2°; MeO, EtNH, Cl, 149-50°; MeO, PrNH, Cl, 138-40°; MeO, iso-PrNH, Cl, 125.5-6.5°; MeO, CH2:CHCH2NH, Cl, 105-6.5°; MeO, BuNH, Cl, 140-2°; MeO, sec-BuNH, Cl, 106-8°; MeO, iao-BuNH, Cl, 113.5-15.5°; MeO, tert-BuNH, Cl, 98-108°; MeO, Me(CH2)4NH, Cl, 100.5-2.5°; MeO, BuCHMeNH, Cl, -; MeO, Et2CHNH, Cl, -; MeO, Me(CH2)5NH, Cl, 72.5-5.5°; MeO, cyclopropylmethylamino, Cl, 132-3°; MeO, cyclopropylamino, Cl, 167-9°; MeO, cyclopentylamino, Cl, 119.5-21.5°; MeO, PhCH2NH, Cl, 157-8°; MeO, p-MeC6H4CH2NH, Cl, 112.5-14.5°; MeO, o-FC6H4CHNH, Cl, 171-4°; MeO, p-ClC6H4CH2NH, Cl, 136-7°; MeO, PhCH2CH2NH, Cl, 115-19°; MeO, F3CCH2NH, Cl, 153-4°; MeO, F3CCH2CH2NH, Cl, 124.5-5.5°; MeO, HOCH2CH2NH, Cl, 155-7°; MeO, HOCH2(CHOH)4CH2NH, Cl, 172-5°; MeO, H2NCH2CH2NH, Cl, 265°; MeO, Me2NCH2CH2NH, Cl, 257°; MeO, 4-pyridylmethylamino, Cl, 95-7°; Me, 2-furylmethylamino, Cl, 148-9°; MeO, MeEtN, Cl, 102-4°; MeO, MePrN, Cl, 83.5-5.5°; MeO, iso-PrMeN, Cl, 75.5-7.5°; MeO, Me(CH2:CHCH2)N, Cl, 90.5-2°; MeO, MeBun, Cl, 59.5-61.5°; MeO, Et2N, Cl, 99-101°; MeO, EtPrN, Cl, -; MeO, iso-PrEtN, Cl, -; MeO, Et(CH2:CHCH2)N, Cl, -; MeO, EtBun, Cl, 77.5-9.5°; Me, Pr2N, Cl, 68.5-71.5°; MeO, PrBuN, Cl, -; MeO, 1-pyrrolidinyl, Cl, 168-71°; MeO, hexamethylenimino, Cl, 109-11°; MeO, 4-methylpiperazino, Cl, 186-8°; MeO, MeNHNH, Cl, 136.5-8°; MeO, Me2NCH2CH2O, Cl, 134.5-6.5°; NH2, H, Cl, 227-30°; OH, H, MeSO2, 239-42° (decompoaition).

p-Methylbenzylamine is treated with H2NC(:NH)SMe.0.5H2SO4 to give 28% p-MeC6H4CH2NHC(:NH)NH2HCl, m. 153-5°. Similarly prepared are Me(PhCH2)NC(:NH)NH2.HCl, m. 122.5-5.5°, and the following RNHC(:NH)NH2.HCl (R and m.p. given): o-ClC6H4CH2, 131-6°; p-ClC6H4CH2, 162.5-4.5°; p-MeOC6H4CH2, 132-7°; 2,4-Me2C6H3CH2, 105-15°; 2,4-Cl2C6H3CH2, 145-8°; 3,4-Cl2C6H3CH2, 153-7°; PhCH2CH2, 135-8°; PhCH2, 175-8°. 5,6-Diaminouracil-HCl (17.9 g.) is treated at 60° with 14.9 g. cyclohexylglyoxal-0.5H2O to give 7.5 g. 7-cyclohexyllumazine [III (X = H, Y = cyclohexyl)], m. 229-31°, which is hydrolyzed to give II (X = OH, Y = cyclohexyl, Z = H). Similarly prepared are (m.p. given): III (X = Me, Y = Ph) [or III (X = Me, Y = Me)], 281.5-2.5°; III (X = Ph, Y = Me) [or III (X = Me, Y = Ph) [aic], 254.5-5.5°; II (X = OH, Y = Ph, Z = Me) [or II (X = OH, Y = Me, Z = Ph)], 193.5-4.5°; II (X = OH, Y = Me, Z = Ph) [or II (X = OH, Y = Ph, Z = Me)] [aic], 155-6°. II (X = MeO, Y = Ph, Z = Me) [or II (X = MeO, Y = Me, Z = Ph)] (m. 163-4°) and II (X = MeO, Y = Me, Z = Ph) [or II (X = MeO, Y = Ph, Z = Me)][aic] (m. 162.5-3.5°) are prepared by esterification. Methyl 3-isopropylidenamino-6-anilino-2-pyrazinecarboxylate, m. 195.5-7.5°, is prepared from Me2CO and the amine. Me 3-amino-5,6,7,8-tetrahydroquinoxaline-2-carboxylate, m. 154-5°, and Me 3-amino-7-chloroquinoxaline-2-carboxylate, m. 224.5-5.5°, are prepared by esterification. Alloxan-H2O (61.44 g.) is treated with 60 g. 3,4-(H2N)2C6H3Cl to give 33% 8-chloroalloxazine, m. 365-6°, and 42% 7-Chloroalloxazine, m. >380°, which is treated at 165° with NH3 in an autoclave to give 68% 3-amino-7-chloroquinoxaline-2-carboxylic acid, m. 191-2° (decomposition). A mixture of 33 g. II (X = NH2, Y = H, Z = Cl), 200 ml. Ac2O, and 200 ml. HC(OEt)3 is refluxed 1.5 hra. to give 20 g. 4-hydroxy-6-chloropteridine (VI), m. 268-70° (decomposition). VI (5.5 g.) is treated with 4.4 g. PhCH2SH to give 5.5 g. 4-hydroxy-6-benzylthiopteridine (VIII), m. 233-5°. Similarly prepared is 4-hydroxy-6-methylthiopteridine, m. 289.5-91.5°. VII is heated with NaOH to give II (X = OH, Y = H, Z = PhCH2S(VIII)), m. 138.9°. Similarly prepared is II (X = OH, Y = H, Z = MeS), m. 182-4° (decomposition). II (X = MeO, Y = Me2N, Z = Cl) (11.5 g.) is treated with 26.3 g. H2NC(:NH)NH2.HCl (IX) in the presence of 5.75 g. Na to give 93% (3-amino-5-dimethylamino-6-chloro-2-pyrazinecarbonyl)guanidine (X), m. 216-17°, HCl salt m. 298° (decomposition). Similarly prepared is I.HCl (R = R1 = H, X = Y = Cl) (m. 259-61°) which is treated with Me2NH to give X. II (X = MeO, Y = Me2NCH2CHO, Z = Cl) (9.4 g.) is treated with 20.0 g. IX in the presence of 4 g. Na to give 2.5 g. I.2HCl [R = R1 = H, X = NHC(:NH)NH2, Z = Cl], m. >340°. A solution of 8.5 5. VIII in 50 ml. Ac2O is heated 5 hra. to give 6.6 g. 2-methyl-6-benzylthio-4H-pyrazine[2,3-d][1,3]oxazin-4-one [IV (X = PhCH2S)] (XI), m. 116.5-18.5°; aimilarly prepared ia IV (X = MeS), m. 189-91°. XI (3.4 g.) is treated with 5.0 g. IX in the presence of 1.0 g. Na to give 1.1 g. I (R = R1 = X = H, Y = PhCH2S), m. 171-3° (decomposition). Also prepared, by the above or related methods, are the following I (R = R1 = H) (X, Y, and m.p. given): NH2, Br, 232.5-5.5° (decomposition); NH2, iodine, 273-4° (decompoaition); H, MeS, 203-5°; H, MeSO2, 224-6° (decompoaition); OH, H, >310°; NH2, H, 286-8°; Me2N, H, 224-5°; MeO, H, 229-30°; PhCH2NH, H, 231-3°; the following I (R = R1 = H, Y, = Cl) (X and m.p. given): NH2, 240.5-1.5° (HCl salt m. 293.5°); MeNH, 238-9°; EtNH, 217-18°; PrNH, 221-2°; iso-PrNH, 215°; CH2:CHCH2NH, 213-14°; BuNH, 219.5°; sec-BuNH, 208-9°; iso-BuNH, 221°; tert-BuNH, 222-3°; Me(CH2)4NH, 215-16°; BuCHMeNH, 186.5-8.5°; Et2CHNH, 209-11°; Me(CH2)5NH, 194.5-6.5°; cyclopropylmethylamino, 220-1.5°; cyclopropylamino, 213-15°; cyclopentylamino, 219-20°; PhCH2NH, 206-9°; p-MeC6H4CH2NH, 216-17°; o-FC6H4CH2NH, 206-8°; p-ClC6H4CH2NH, 225-6°; PhCH2CH2NH, - (HCl salt m. 199-202°); F3CCH2NH, 232-3°; F3CCH2CH2NH, 221-2.5°; HOCH2CH2NH, - (HCl salt m. 272-3°); HOCH2(CHOH)4CH2NH, 223-4°; H2NCH2CH2NH, - (HCl salt m. 311°); Me2NCH2CH2NH, 192.5-4.5°; 4-pyridylmethylamino, 239-40°; 2-furylmethylamino, 217-18°; PhNH, 246.5-8.5°; p-ClC6H4NH, 276-8°; MeEtN, 229-3°; MeBuN, 214-15°; iso-PrMeN, 207-8°; Me(CH2:CHCH2)N, 207-8°; MeBuN, 208-9°; Et2N, 215°; EtPrN, 224-5°; iso-PrEtN, 207-8°; Et(CH2:CHCH2)N, 208-9°; EtBuN, 200.5-1.5°; Pr2N, 221-2°; PrBuN, 215-17°; 1-pyrrolidinyl, 244.5-5.5°; hexamethylenimino, 224-5°; 4-methylpiperazino, - (2HCl salt m; 229-300°); MeNHNH, 234°; C12N, - (HCl salt m. 259-61°); MeNH, 218-19° (decomposition); Me2NNMe, - [2HCl salt m. 262° (decomposition)]; MeNH, 210° (decomposition) [aic]; Me2N, 245° (decomposition); MeBrN, - [HCl salt m. 288° (decomposition)]; EtNH, 207.5-9.5° (decomposition); cyclohexylamino, 221-2° (decompoaition); cycloheptylamino, 228-30° (decompoaition); cyclopropylamino, 196.5-9° (decomposition); PhNH, 224-6° (decomposition); PhNH, 194.5-5.5° (decomposition)[aic]; Ph2N, 234.5-5.5°; PhClN, 214-16° (decomposition); PhBrN, 234-6° (decomposition); p-ClC6H4NH, 282-5° (decomposition); MePhN, 212-13° (decomposition); MePhN, 218-19° (decomposition)[aic]; Me2NNPh, 204-6° (decomposition); 1-pyrrolidinyl, 220-1°; 1-pyrryl, 211-13°; 3-chloro-1-pyrrolyl, 246-7° (decompoaition); (3-isopropylidineamino-6-anilino-2-pyrazinecarbonyl)guanidine, 214-16° (decomposition); (3-acetoamido-6-methylthio-2-pyrazinecarbonyl)guanidine, 220-2°; the following I (X = NH2, Y = Cl) (R, R1, m.p., and m.p. HCl salt given): H, HOCH2CH2, -, 228.5-9.5° (decomposition); H, Ph, -, -, [MeSO3H salt m. 272° (decompoaition)]; H, PhCH2, 215-16° (decomposition); -; H, p-FC6H4CH2, 216-19.5° (decompoaition), -; H, PhCHMe, 153-60° (decomposition), -; H, 2-C10H7CH2, 243.5-5.5° (decomposition), -; H, 3-pyridylmethyl, 280.5-3.5° (decomposition), -; H, p-MeC6H4CH2, 210-12° (decompoaition), -; Me, PhCH2, 274.5° (decomposition), -; H, o-ClC6H4CH2, 220-3° (decompoaition), -; H, p-ClC6H4CH2, 204-6° (decomposition), -; H, p-MeOC6H4CH2, 175.5-9.5° (decomposition), -; H, 2,4-Me2C6H3CH2, 220-2° (decompoaition), -; H, 2,4-Cl2C6H3CH2, -, 267.5-70.5° (decomposition); H, 3,4-Cl2C6H3CH2, 216-19° (decomposition), -; H, PhClH,CH2, 219-21° (decompoaition), -; Me, Me, 240° (decomposition), -, [HCl.H2O salt m. 275° (decompoaition)]; H, octahydrol-azocinyl, -; Et, Et, 265° (decompoaition), -; Bu, Bu, 148-9°, -; (RR1 =) (CH2)4, -, -; (RR1 =) 3-oxapentamethylene, -, -; the following I (R = R1 = Me, Y = Cl) (X and m.p. given): iso-PrNH, 238-40.5°; CH2:CHCH2NH, 213-15°; BuNH, 187.5°; cyclopropylmethylamino, 196-7°; Me2N, 219°; MeEtN, 217-18°; iso-PrMeN, 209-11°; Et2N, 212-14°; I (R = H, R1 = HOCH2CH2, X = iso-PrNH, Y = Cl).HCl.0.5H2O [m. 185-6° (decomposition)], and 1-(3,5-diamino-6-chloro-2-pyrazinecarbonyl)2,3-dimethylguanidine.

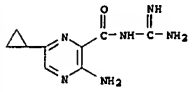
IT *1155-05-1P 1465-92-5P 1634-17-9P*
1634-21-5P 2018-30-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 1155-05-1 CAPLUS

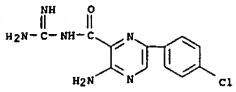
CN Pyrazinecarboxamide, N-amidino-3-amino-6-cycloheptyl- (7CI, 8CI) (CA INDEX NAME)



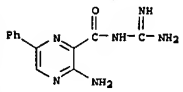
RN 1465-92-5 CAPLUS
CN Pyrazinecarboxamide, N-amidino-3-amino-6-cyclopropyl- (7CI, 8CI) (CA INDEX NAME)



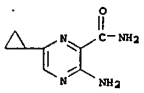
RN 1634-17-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



RN 1634-21-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-phenyl- (9CI) (CA INDEX NAME)



RN 2018-30-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-cyclopropyl- (7CI, 8CI) (CA INDEX NAME)



L7 ANSWER 25 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1968:427459 CAPLUS
DOCUMENT NUMBER: 69:27459
TITLE: 3-amino-6-substituted-pyrazinoyl guanidines
INVENTOR(S): Cragoe, Edward J., Jr.
PATENT ASSIGNEE(S): Merck and Co., Inc.
SOURCE: U.S., 9 pp. Continuation-in-part of U.S. 3313813
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

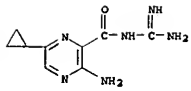
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3360517		19671226	US 1966-534638	19660331

GI For diagram(s), see printed CA Issue.

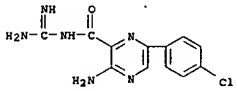
AB Continuation-in-part of U.S. 3,313,813. The title compds. (I) which possess diuretic and natriuretic properties, were prepared by treating II (R = alkoxy) with a guanidine or by treating II (R = OH) with a lower alkanoic acid anhydride to give III, which was treated with a guanidine and the product hydrolyzed. Thus, 52.5 g. aminomalonamidamidine-di-HCl was added to an ice cold solution of 28.8 g. ethylglyoxal in 450 ml. H2O, .apprx.65 ml. concentrated NH4OHsoln. added and the basic solution kept 20 hrs. at room temperature to give 17.5 g. II (R1 = Et, X = H, R2 = NH2), m. 160-7° (iso-PrOH). A mixture of 24.4 g. of this and 200 ml. 10% NaOH was stirred on a steam bath 30 min. and worked up to give 22.8 g. II (R1 = Et, R2 = OH, X = H) m. 149-52°. A solution of 14 g. of this in 160 ml. 33% HCl in MeOH was stirred 24 hrs. at room temperature and worked up to give 4.3 g. II (R1 = Et, R2 = OMe, X = H) m. 85-7.5° (iso-PrOH). A mixture of 5.8 g. guanidine-HCl and a solution of 1.1 g. Na in 30 ml. MeOH was concentrated in vacuo to a sirup, 0.012 mole of the above ester added, and the mixture heated 20 min. on a steam bath and worked up to give 53% I (R1 = Et, R2 = R3 = R4 = X = H) m. 207-9° (decomposition). A mixture of 31 g. II (R1 = Me, R2 = NH2, X = H) and 320 ml. 10% NaOH was heated 30 min. on a steam bath to give 25 g. of the acid Na salt. A mixture of 97 g. of the Na salt, 77 g. Me2SO4, and 700 ml. MeOH was stirred 19 hrs. at room temperature to give 18 g. II (R1 = Me, R2 = OMe, X = H) m. 138-40°. Treatment of the ester with guanidine-HCl as before gave 87% I (R1 = Me, R2 = R3 = R4 = X = H), m. 218-19° (decomposition). The following were similarly prepared: II (R1 = cyclohexyl, R2 = NH2, X = H); II (R1 = cyclohexyl, R2 = OH, X = H); II (R1 = cyclohexyl, R2 = OMe, X = H), m. 126.5-8.0°; 61% I (R1 = cyclohexyl, R2 = R3 = R4 = X = H), m. 228-30°; II (R1 = cyclopropyl, R2 = NH2, X = H), m. 185.5-7.5°; II (R1 = cyclopropyl, R2 = OH, X = H) m. 169-72°; II (R1 = cyclopropyl, R2 = OMe, X = H), m. 112.5-4.5°; 61% I (R1 = cyclopropyl, R2 = R3 = R4 = X = H), m. 196.5-9.0° (decomposition); II (R1 = Ph, R2 = OMe, X = H), m. 140-1°; 34% I (R1 = Ph, R2 = R3 = R4 = X = H), m. 194.5-5.5°; II (R1 = PhCH2CH2, R2 = OH, X = H); II (R1 = PhCH2CH2, R2 = OMe, X = H); II (R1 = p-ClC6H4, R2 = NH2, X = H); II (R1 = p-ClC6H4, R2 = OH, X = H) m. 207-13°; II (R1 = p-ClC6H4, R2 = OMe, X = H), m. 181.5-3.5°; and 70% I (R1 = p-ClC6H4, R2 = R3 = R4 = X = H), m. 282-5° (decomposition). With vigorous stirring, .apprx.140 g. Cl was passed through a solution just <40° of 3180 ml. H2O, 750 ml. HOAc, and 90 g. II (R1 = X = H, R2= OMe) 25 min. to give II (R1 = Cl, R2 = OMe, X = Cl), m. 142° (decomposition), which on stirring at 25° with 150 g. NaHSO3 in 900 ml. H2O gave 55% II (R1 = Cl, R2 = OMe, X = H), m. 159-61°. A solution of 18.8 g. of this, 15 g. PhNH2, 2.5 ml. concentrated HCl, and 150 ml. MeOAc was refluxed 16 hrs. to give 7.4 g. II (R1 = anilino, R2 = OMe, NHX = isopropylidenamino), m. 193.5-7.5°. Treatment of the ester with guanidine hydrochloride gave 35% I (R1 = anilino, R2 = R3 = R4 = H, NHX = isopropylidenamino) m. 214-16° (decomposition). A mixture of 300 g. II (R1 = Cl, R2 = OMe, X = H) and 2 l. concentrated NH4OH was stirred 16 hrs. at room temperature to give 260 g. II (R1 = Cl, R2 = NH2, X = H), m. 227-30°. A mixture of 3.3 g. of this amide, 200 ml. Ac2O, and 200 ml. (EtO)3CH was refluxed 1.5 hrs. to give 20 g. IV (R1 = Cl, R2 = H) m. 268-70° (decomposition). A solution of 5.5 g. IV (R1 = Cl, R2 = H) and 4.4 g. benzyl mercaptan in 4% NaOH was heated 30 min. on a steam bath to give 5.5 g. IV (R1 = PhCH2S, R2 = H), m. 233-5° (iso-PrOH). A solution of 42.2 g. IV (R1 = PhCH2S, R2 = H) in 600 ml. 5% NaOH was heated 8 hrs. on a steam bath to give 23 g. II (R1 = PhCH2S, R2 = OH, X = H), m. 127-39°. A solution of 8.5 g. of this acid in 50 ml. Ac2O was heated 5 hrs. on a steam bath to give 6.6 g. III (R1 = PhCH2S, R2 = Me), m. 116.5-18.5° (C6H6). To a solution of 1.0 g. Na in 30 ml. iso-PrOH was added 5 g. guanidine-HCl and 3.4 g. III (R1 = PhCH2S, R2 = Me), and the mixture kept 1 hr. at room temperature to give 1.1 g. I (R1 = PhCH2S, R2 = R3 = R4 = X = H), m. 171-3° (aqueous iso-PrOH). Similarly prepared were: IV (R1 = MeS, R2 = H), m. 289.5-91.5°; II (R1 = MeS, R2 = OH, X = OH, m. 182-4° (decomposition); III (R1 = MeS, R2 = Me), m. 189-91°; 68% I (R1 = MeS, R2 = R3 = R4 = H, X = Ac), m. 220-2°; and 86% I (R1 = MeS, R2 = R3 = R4 = X = H) m. 203-5°. A solution of 1.05 g. KMnO4 in 35 ml. H2O was added to a solution of 0.92 g. II (R1 = MeS, R2 = OH, X = H) and 15 ml. of a 2.5% NaOH solution to give 0.5 g. II (R1 = MeSO2, R2 = OH, X = H), m. 239-42° (decomposition). Also prepared were: III (R1 = MeSO2, R2 = Me), m. 214-16°; 27% I (R1 = MeSO2, R2 = R3 = R4 = X = H), m. 224-6° (decomposition); II (R1 = PhCH2SO2, R2 = OH, X = H); III (R1 = PhCH2SO2, R2 = Me); I (R1 = PhCH2SO2, R2 = R3 = R4 = X = H); IV (R1 = MeO, R2 = Me), m. 232-4°; III (R1 = MeO, R2 = Me), m. 190-2°; 92% I (R1 = MeO, R2 = R3 = R4 = H, X = Ac) (as nitrate, m. 225-9°); I (R1 = MeO, R2 = R3 = R4 = X = H); II (R1 = Cl, R2 = NH2, X = Me), m. 152.5-4.5°; IV (R1 = Cl, R2 = Me), m. 217.5-19.5°; IV (R1 = NMe2, R2 = Me), m. 256-8°; II (R1 = NMe2, R2 = OH, X = H), m. 164.5-5.5°; III (R1 = NMe2, R2 = Me), m. 212° (decomposition); I (R1 = NMe2, R2 = R3 = R4 = H, X = Ac) [as nitrate, m. 236.5° (decomposition)]; I (R1 = NMe2, R2 = R3 = R4 = X = H), m. 196.5° (decomposition); IV (R1 = isopropylamino, R2 = Me); II (R1 = isopropylamino, R2 = OH, X = H) Na salt; III (R1 = isopropylamino, R2 = R3 = R4 = H, X = Ac) [as nitrate, m. 203-5°) (decomposition)]; I (R1 = isopropylamino, R2 = R3 = R4 = X = H); IV (R1 = PhCH2NH, R2 = Me), m. 212-14°; II (R1 = PhCH2NH, R2 = OH, X = H), m. 130-2° (decomposition); III (R1 = PhCH2NH, R2 = Me), m. 168-70°; I (R1 = PhCH2NH, R2 = R3 = R4 = H, X = Ac) (as nitrate, m. 225-8°); I (R1 = PhCH2, R2 = R3 = R4 = X = H); IV (R1 = piperidino, R2 = Me), m. 207-9°; II (R1 = piperidino, R2 = ONa, X = H); III (R1 = piperidino, R2 = Me), m. 172-4°; I (R1 = piperidino, R2 = R3 = R4 = H, X = Ac) (as nitrate, m. 228°); I (R1 = piperidino, R2 = R3 = R4 = X = H); IV (R1 = MeONH, R2 = Me), m. 232-4°; II (R1 = MeONH, R2 = ONa, X = H); III (R1 = MeONH, R2 = Me), m. 190-2°; I (R1 = MeONH, R2 = R3 = R4 = H, X = Ac), m. 225° (decomposition); I (R1 = MeONH, R2 = R3 = R4 = X = H); I (R1 = NH2, R2 = R3 = R4 = X = H); I (R1 = MeNH, R2 = R3 = R4 = X = H); I (R1 = R3 = R4 = Me, R2 = X = H) I [R1 = Me, R2 = X = H, {R3R4 = } tetramethylene]; I (R1 = R2 = R3 = Me, R4 = X = H); 2-hydroxyguanidine sulfate, m. 127.5-35.5° (hygroscopic); I.HCl (R1 = Me, R2 = R3 = X = H, R4 = CH2CH2OH); I (R1 = Me, R2 = R3 = X, R4 = Ph); benzylguanidine-HCl, m. 175-8°; and I (R1 = Me, R2 = R3 = X = H, R4 = PhCH2). Examples of a formulation for a dry filled capsule containing 50 mg. of I.HCl (R1 = Me2N, R2 = R3 = R4 = X = H) as the active ingredient and a combination dosage form in a dry filled capsule containing 50 mg. I.HCl (R1 = Me, R2 = R3 = R4 = X = H) and 50 mg. hydrochlorothiazide are given.

IT *1465-92-5P 1634-17-9P 1634-21-5P*
2018-30-6P 5148-61-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 1465-92-5 CAPLUS
CN Pyrazinecarboxamide, N-amidino-3-amino-6-cyclopropyl- (7CI, 8CI) (CA INDEX NAME)



RN 1634-17-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



RN 1634-21-5 CAPLUS
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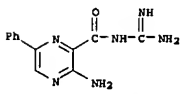

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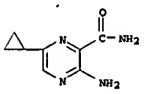
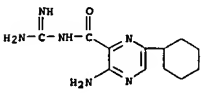
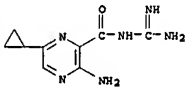


RN 5148-61-8 CAPLUS
CN Pyrazinecarboxamide, N-amidino-3-amino-6-cyclohexyl- (7CI, 8CI) (CA INDEX NAME)

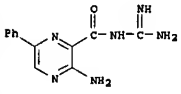


=> D 26-32 IBIB ABS HITSTR

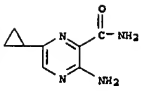
L7 ANSWER 26 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1967:500105 CAPLUS
DOCUMENT NUMBER: 67:100105
TITLE: Pyrazine diuretics. III. 5- and 6-alkyl, -cyclo-alkyl, and -aryl derivatives of N-amidino-3-aminopyrazinecarboxamides
AUTHOR(S): Bicking, John B.; Robb, Charles M.; Kwong, Sara F.; Cragoe, Edward J., Jr.
CORPORATE SOURCE: Merck and Co. Inc., West Point, PA, USA
SOURCE: Journal of Medicinal Chemistry (1967), 10(4), 598-602
CODEN: JMCMAR; ISSN: 0022-2623
DOCUMENT TYPE: Journal
LANGUAGE: English
GI For diagram(s), see printed CA Issue.
AB cf. CA 63: 11561e; 66: 37887h. In evaluations of N-amidino-3-aminopyrazinecarboxamides as diuretics, a series of 5- and 6-alkyl, -cycloalkyl, and -aryl derivs. was synthesized and studied for effects on renal electrolyte excretion. Several compds. reverse the electrolyte excretion effects of deoxycorticosterone acetate in the adrenalectomized rat, the most highly active being N-amidino-3-amino-6-methylpyrazinecarboxamide (I). 16 references.
IT *1465-92-5P 1634-21-5P 2018-30-6P 4853-48-9P 5148-61-8P 16014-43-0P 16014-59-8P*
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)
RN 1465-92-5 CAPLUS
CN Pyrazinecarboxamide, N-amidino-3-amino-6-cyclopropyl- (7CI, 8CI) (CA INDEX NAME)



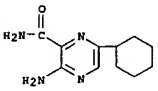
RN 1634-21-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-phenyl- (9CI) (CA INDEX NAME)



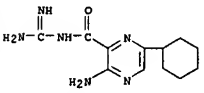
RN 2018-30-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-cyclopropyl- (7CI, 8CI) (CA INDEX NAME)



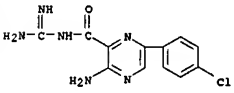
RN 4853-48-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-cyclohexyl- (7CI, 8CI) (CA INDEX NAME)



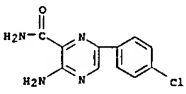
RN 5148-61-8 CAPLUS
CN Pyrazinecarboxamide, N-amidino-3-amino-6-cyclohexyl- (7CI, 8CI) (CA INDEX NAME)



RN 16014-43-0 CAPLUS
CN Pyrazinecarboxamide, N-amidino-3-amino-6-(p-chlorophenyl)-, monohydrochloride (8CI) (CA INDEX NAME)



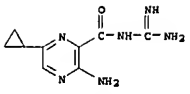
RN 16014-59-8 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-(4-chlorophenyl)- (9CI) (CA INDEX NAME)



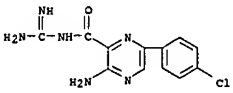
L7 ANSWER 27 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1966:67873 CAPLUS
DOCUMENT NUMBER: 64:67873
ORIGINAL REFERENCE NO.: 64:12698g-h,12699a-h,12700a-b
TITLE: Pyrazine diuretics
PATENT ASSIGNEE(S): Merck & Co., Inc.
SOURCE: 30 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 6409714		19651001	NL 1964-9714	19640821
PRIORITY APPLN. INFO.:			US	19640331

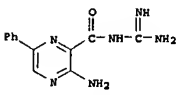
GI For diagram(s), see printed CA Issue.
AB Diuretics with structure I were prepared in 4 steps: (1) preparation of the 2-pyrazinecarboxamide, (2) hydrolysis of the amide to the acid, (3) esterification, and (4) treatment with guanidine. An alternative method makes use of the corresponding pteridines. Step 1: to an ice-cold solution of 28.8 g. ethylglyoxal in 450 ml. H2O 52.5 g. aminomalonamide amidine was added followed by the addition of approx. 65 ml. concentrated aqueous NH4OH before allowing the mixture to stand 20 hrs. at room temperature to give 17.5 g. II (A = NH2, R1 = Et), m. 160-7° (iso-PrOH). Step 2: a mixture of 24.4 g. II (A = NH2, R1 = Et) and 200 ml. 10% aqueous NaOH was heated 30 min. on a steam bath with stirring and then worked up to obtain 22.8 g. III (A = NH2, R1 = Et), m. 149-52°. Step 3: a solution of 14 g. III (A = NH2, R1 = Et) in 160 ml. 33% methanolic HCl was stirred 24 hrs. at room temperature, then the solvent evaporated in vacuo, and the residue triturated with NaHCO3 solution to obtain 4.3 g. IV (A = NH2, R1 = Et), m. 85-7.5° (iso-PrOH). Step 4: to a solution of 1.1 g. Na in 30 ml. MeOH 5.8 g. guanidine-HCl was added, the solution then concentrated in vacuo to a sirup to which 0.012 mole IV (A = NH2, R1 = Et) was then added and warmed 20 min. on a steam bath, the mixture diluted with ice water followed by 15 ml. 5% HCl, then filtered, and treated with 2 ml. concentrated HCl to obtain the HCl salt as a precipitate, which was then dissolved in H2O and treated with aqueous NaOH to give the free base V (A = NH2, R1 = Et), m. 207-9°. Similarly the following compds. (A = NH2) were prepared (compds., R1, and m.p. given): IV, Me, 138.5-40.5°; V, Me, 218-19° (decomposition); IV, cyclohexyl, 126.5-8.0°; II, cyclohexyl, --; III, cyclohexyl, --; V, cyclohexyl, 228-30° (decomposition); II, cyclopropyl, 185.5-7.5°; III, cyclopropyl, 169-72°; IV, cyclopropyl, 112-14.5°; V, cyclopropyl, 196.5-9.0°; IV, Ph, 140-1°; V, Ph, 194.5-5.5°; II, 4-ClC6H4, --; III, 4-ClC6H4, 213-15°; IV, 4-ClC6H4, 181.5-3.5°; V, 4-ClC6H4, 282-5° (decomposition). In a 5-l. flask 90 g. IV (A = NH2, R1 = H) was added to a warm (approx. 38°) solution of 750 ml. HOAc in 3.18 l. H2O, which was then warmed to 41° with stirring until the mixture was a solution, then cooled to just below 40° with strong agitation, and 140 g. Cl introduced over 25 min. to give as a white precipitate IV (A = NHCl, R1 = Cl), decomposed 142° (HOAc), which was then added to a solution of 150 g. NaHCO3 in 900 ml. H2O in a 4-l. beaker and stirred 0.5 hr. with occasional addition of ice to keep the temperature at 25°, filtered off, washed with ice water several times and once with 50 ml. cold iso-PrOH, and air-dried to give 55% IV (A = NH2, R1 = Cl), m. 159-61°. A solution of 18.8 g. IV (A = NH2, R1 = Cl), 15 g. PhNH2, and 2.5 ml. concentrated HCl in 150 ml. Me2CO was refluxed 16 hrs., cooled, and filtered to remove 7.4 g. IV (A = N:CMe2, R1 = PhNH), m. 195.5-7.5° (iso-PrOH). V (A = N:CMe2, R1 = PhNH), decomposed 214-16° (H2O), was obtained in 35% yield with Step 4. II (A = NH2, R1 = Cl), m. 227-30°, was obtained by stirring 16 hrs. a mixture of 300 g. IV (A = NH2, R1 = Cl) and 2 l. concentrated NH4OH at room temperature
A mixture of 33 g. II (A = NH2, R1 = Cl), 200 ml. Ac2O, and 200 ml. HC(OEt)3 was refluxed 1.5 hrs. and filtered to give 20 g. VI (R1 = Cl), decomposed 268-70° (aqueous iso-PrOH). A solution of 5.5 g. VI (R1 = Cl) and 4.4 g. PhCH2SH in 100 ml. 4% NaOH was warmed 30 min. on a steam bath, cooled, treated with 20 ml. 40% NaOH, filtered, and the residue then dissolved in 250 ml. hot H2O and acidified to give 5.5 g. VI (R1 = PhCH2S), m. 233-5° (aqueous iso-PrOH). III (A = NH2, R1 = PhCH2S), m. 138-9° (EtOAc), was obtained in 23 g. yield by heating gently 42.2 g. VI (R1 = PhCH2S) 8 hrs. in 600 ml. 5% NaOH, filtering, and acidifying the residue in aqueous solution Treatment of 8.5 g. III (A = NH2, R1 = PhCH2S) with 50 ml. Ac2O while heating 5 hrs. on a steam bath followed by drying in vacuo gave 6.6 g. VII (R1 = PhCH2S), m. 116.5-18.5° (PhH). To a solution of 5 g. guanidine-HCl and 1 g. Na in 30 ml. iso-PrOH 3.4 g. VII (R1 = PhCH2S) was added, and the mixture allowed to stand 1 hr. at room temperature and then worked up to obtain 1.1 g. V (A = NH2, R1 = PhCH2S), decompose 171-3° (aqueous iso-PrOH). Analogously the following compds. were prepared (R1 = MeS; compound, A, and m.p. given): VI, --, 289.5-91.5°; III, NH2, 182-4° (decomposition); VII, --, 189-91°; V, NHAc, 220-2°; V, NH2, 203-5°. V (A = NHAc, R1 = MeS) was readily hydrolyzed in aqueous HCl to give V (A = NH2, R1 = MeS). Treatment of 0.92 g. III (A = NH2, R1 = MeS) in 15 ml. 2.5% NaOH with a solution of 1.05 g. KMnO4 in 35 ml. H2O gave III (A = NH2, R1 = MeSO2), decomposed 239-42° (iso-PrOH), which was then treated with Ac2O to obtain VII (R1 = MeSO2), m. 214-16°, and then with guanidine to obtain V (A = NH2, R1 = MeSO2), decomposed 224-6° (aqueous iso-PrOH). A suspension of 20 g. IV CA = NH2, R1 = Cl) in 200 ml. 40% MeNH2 was stirred 20 hrs. at room temperature to give 85% IIa (A = NH2, R1 = Cl), m. 152.5-4.5° (EtOH). VIII (R1 = Cl), m. 217.5-19.5° (MeOH), was obtained in 82% yield by refluxing 2 hrs. 20 ml. HC(OEt)3 and 20 ml. Ac2O to which 3 g. IIa (A = NH2, R1 = Cl) had been added. Warming 5 ml. 25% aqueous Me2NH in 40 ml. MeOCH2CH2OH after addition of 4 g. VIII (R1 = Cl) 2.5 hrs. on a steam bath produced 72% VIII (R1 = Me2N), m. 256-8° (MeOH), which was converted into III (A = NH2, R1 = Me2N), decomposed 164.5-5.5° (MeOH), by warming 2.5 hrs. in 15 ml. 10% NaOH. By means of these methods the compds. in the table were prepared Benzylguanidine sulfate (IX), m. 203-7°, was obtained in 78 g. yield by combining 80.3 g. PhCH2NH2 and 69.5 g. MeSC(:NH)NH2.H2SO4 in 200 ml. H2O at room temperature 18 hrs. IX was treated with 48.8 g. BaCl2.2H2O to obtain benzylguanidine-HCl, m. 175-8° (aqueous alc.), in 55% yield. Similarly 2-hydroxyethylguanidine, m. 127.5-35.5°, was prepared
IT *1465-92-5*, Pyrazinecarboxamide, N-amidino-3-amino-6-cyclopropyl- *1634-17-9*, Pyrazinecarboxamide, N-amidino-3-amino-6-(p-chlorophenyl)- *1634-21-5*, Pyrazinecarboxamide, N-amidino-3-amino-6-phenyl- *2018-30-6*, Pyrazinecarboxamide, 3-amino-6-cyclopropyl-
(preparation of)
RN 1465-92-5 CAPLUS
CN Pyrazinecarboxamide, N-amidino-3-amino-6-cyclopropyl- (7CI, 8CI) (CA INDEX NAME)



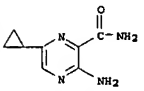
RN 1634-17-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-(4-chlorophenyl)-(9CI) (CA INDEX NAME)



RN 1634-21-5 CAPLUS
CN Pyrazinecarboxamide, 3-amino-N-(aminoiminomethyl)-6-phenyl- (9CI) (CA INDEX NAME)



RN 2018-30-6 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-cyclopropyl- (7CI, 8CI) (CA INDEX NAME)



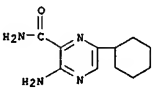
L7 ANSWER 28 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1966:43898 CAPLUS
DOCUMENT NUMBER: 64:43898
ORIGINAL REFERENCE NO.: 64:8208d-h,8209a-b
TITLE: Pyrazinecarboxylic acid derivatives
PATENT ASSIGNEE(S): Merck & Co., Inc.
SOURCE: 15 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 6409713		19651001	NL 1964-9713	19640821
PRIORITY APPLN. INFO.:			US	19640331

AB A series of pyrazinecarboxylic acid derivs. of the general formula I (preceding abstract) was prepared; in I, R is H or Cl, R1 is H, Cl, I, Me, Ph, or cyclohexyl, and R2 is MeO, OH, or H2NC(:NH)NH. I (R = R1 = H, R2 = MeO) (II) (90 g.) in 3180 g. H2O and 750 cc. AcOH treated during 25 min. at 40° with about 140 g. Cl yielded the 3-ClNH analog (III) of I (R = H, R1 = Cl, R2 = MeO) (IV), m. 142° (decomposition) (AcOH). III and 150 g. NaHSO3 in 900 cc. H2O stirred 0.5 hr. at 25° yielded 60 g. light yellow IV, m. 159-61°. IV (9.35 g.) treated dropwise during 10 min. with 10 cc. SO2Cl2, stirred 0.75 hrs., kept overnight at room temperature, and heated 1 hr. at 70° gave 4.2 g. I (R = R1 = Cl, R2 = MeO) (V), m. 233-4° (MeCN), which was also prepared by the method of Neth. Appl. 6,409,712 (cf. preceding abstract). I (R = H, R1 = Br, R2 = MeO)(34.8 g.) and 89 cc. SO2Cl2 heated 1 min. on the steam bath and kept 20 hrs. at room temperature yielded 4 g. V, m. 233-4°. II (30.6 g.) in 500 cc. H2O treated with stirring on a steam bath with 39.8 g. Hg(OAc)2 and then with 50.8 g. iodine in 250 cc. dioxane, stirred 40 min., and poured into 600 cc. 15% aqueous KI yielded 13.5 g. I (R = H, R1 = I, R2 = MeO), m. 200-2° (AcOH) which was converted to V. I (R = H, R1 = Ph, R2 = OH) (30 g.) stirred 42 hrs. at room temperature with 480 g. HCl in 1500 cc. MeOH gave 21 g. I (R = H, R1 = Ph, R1 = MeO) (VI); m. 140-1° (MeOH). VI (28.6 g.) treated 1.5 hrs. at room temperature with 90 cc. SO2Cl2 gave 15 g. I (R = Cl, R1 = Ph, R2 = MeO), m. 187.5-91.5° (AcOH). I (R = H, R1 = Me, R2 = NH2) (VII) (31 g.) and 320 cc. 10% aqueous NaOH stirred 0.5 hr. on the steam bath yielded 25 g. I (R = H, R1 = Me, R2 = ONa) (VIII). VIII (97 g.), 77 g. Me2SO4, and 700 cc. MeOH stirred 19 hrs. at room temperature yielded 18 g. I (R = H, R1 = Me, R2 = MeO) (IX), m. 138.5-40.5° (C6H6). IX (9.2 g.) stirred 0.5 hr. with 65 cc. SO2Cl2 yielded 4.4 g. yellow I (R = Cl, R1 = Me, R2 = MeO), m. 176-8.5° (AcOEt). Aminomalonamidamidine dihydrochloride (52.5 g.) and 46.9 g. cyclohexylglyoxal in 450 cc. H2O basified with 65 cc. concentrated NH4OH and kept 20 hrs. at room temperature gave 67% I (R = H, R1 = cyclohexyl, R2 = NH2) (X). X (32.3 g.) and 200 cc. 10% aqueous NaOH stirred 0.5 hr. on the steam bath yielded 61% I (R = H, R1 = cyclohexyl, R2 = OH) (XI), m. 118-21°. XI (18.6 g.) in 160 cc. 33% HCl-MeOH kept 24 hrs. at room temperature yielded 49% I (R = H, R1 = cyclohexyl, R2 = MeO) (XII), m. 126.5-8.5° (iso-PrOH). XII with SO2Cl2 gave I (R = Cl, R1 = cyclohexyl, R2 = MeO). I (R = Ph, R1 = H, R2 = OH) (0.084 mole) stirred 24 hrs. at room temperature with 160 cc. 33% HCl-MeOH yielded I (R = Ph, R1 = H, R2 = MeO) (XIII), m. 231-2° (iso-PrOH). XIII with SO2Cl2 gave I (R = Ph, R1 = Cl, R2 = MeO). I (R = Me, R1 = H, R2 = OH) (30 g.) stirred 42 hrs. at room temperature with 650 cc. 30% HCl-MeOH yielded 15.4 g. I (R = Me, R1 = H, R2 = MeO), m. 165-7° (H2O), which was converted to I (R = Me, R1 = Cl, R2 = MeO). H2NC(:NH)NH2.HCl (3.85 g.) added to 920 mg. Na in 50 cc. iso-PrOH, filtered, and refluxed 15 min. with 4.44 g. V and the product treated in 50 cc. H2O with 3 cc. 6N HCl yielded 3.4 g. I.HCl [R = R1 = Cl, R2 = H2NC(:NH)NH] (XIV.HCl), m. 259-61°. Powdered V (1.8 g.), 120 cc. H2O, and 0.8 cc. 40% aqueous NaOH refluxed 10 min., and the product (1.5 g.) in 100 cc. H2O treated with 6 cc. saturated aqueous NaHCO3 and acidified with 6N HCl yielded I (R = R1 = Cl, R2 = OH), m. 227° (decomposition). XIV.HCl (100 mg.) in 5 cc. HCONMe2 heated 1 hr. on the steam bath with 1 cc. 25% aqueous Me2NH and diluted with 25 cc. H2O yielded I [R = Me2N, R1 = Cl, R2 = H2NC(:NH)NH], m. 216-17°.

IT *4853-48-9*, Pyrazinecarboxamide, 3-amino-6-cyclohexyl-
(preparation of)

RN 4853-48-9 CAPLUS
CN Pyrazinecarboxamide, 3-amino-6-cyclohexyl- (7CI, 8CI) (CA INDEX NAME)



L7 ANSWER 29 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1966:35932 CAPLUS
DOCUMENT NUMBER: 64:35932
ORIGINAL REFERENCE NO.: 64:6668d-h,6669a-d
TITLE: Pyrazinoylguanidines
PATENT ASSIGNEE(S): Merck & Co., Inc.
SOURCE: 29 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

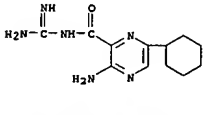
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
NL 6409716		19651001	NL 1964-9716	19640821
PRIORITY APPLN. INFO.:			US	19640331

GI For diagram(s), see printed CA Issue.

AB A series of guanidine derivs. of the general structure I and of N3-substituted I was prepared by the treatment of the corresponding II (R' = Me) with guanidine (III) or a suitable derivative thereof. The I exhibit diuretic activity and are useful in the treatment of edema and hypertension. II (R = X = H, R' = Me) (765 g.) in 5 l. dry C6H6 treated with stirring during 0.5 hr. dropwise with 1.99 l. SO2Cl2, stirred 1 hr., refluxed 5 hrs., and stirred overnight yielded 724 g. II (R = X = Cl, R' = Me) (IV), m. 233-4° (MeCN). MeSH (10 g.) added during 10 min. in 17 cc. 20% aqueous NaOH and 100 cc. MeOH to 17.7 g. IV in 1 l. refluxing MeOH, refluxed 15 min., and cooled gave 12 g. II (R = MeS, X = Cl, R' = Me) (V), m. 214-16° (MeOH). V (23.4 g.), 35 cc. 30% aqueous H2O2, and 300 cc. AcOH stirred 18 hrs. at room temperature yielded 18.5 g. II (R = MeSO, X = H, R' = Me) (VI), m. 237.5-40.5° (decomposition) (MeOH). VI (7.5 g.), 75 cc. AcOH, and 12 cc. H2O heated 3 hrs. on the steam bath yielded 3.7 g. II (R = OH, X = Cl, R' = Me) (VII), decomposed about 245°. VII (0.07 mole) in 250 cc. MeOH hydrogenated 18 hrs. at room temperature and 2.1 atmospheric over 9 g. 5% Pd-C and 4.0 g. MgO gave II (R = OH, R' = Me, X = H) (VIII), decomposed 220-60°. III.HCl (5.0 g.) added to 1.0 g. Na in 30 cc. iso-PrOH, treated with 1.7 g. VIII, heated 3 hrs. on the steam bath, poured into 10 cc. concentrated HCl and 50 cc. H2O, and treated with 20 cc. concentrated HCl yielded 0.8 g. I.HCl (R = OH), decomposed above 310° (H2O). IV (100 g.) in 1 l. dry Me2SO treated with stirring during 45 min. at 65-70° with dry NH3, cooled to about 10° again treated 1.25 hrs. with dry NH3, and stirred into 2 l. H2O gave 82.5 g. II (R = NH2, R' = Me, X = Cl) (IX), m. 212-13° (MeCN). IX (14.2 g.) in 250 cc. MeOH hydrogenated at room temperature and 2.1 atmospheric over 9 g. 5% Pd-C and 4.0 g. MgO yielded 10.0 g. II (R = NH2, R' = Me, X = H) (X), m. 252-4° (decomposition). X with III gave 8% I.HCl (R = NH2), m. 286-8° (decomposition). IV (178 g.) in 1.1 l. iso-PrOH treated with stirring with 200 g. Me2NH in 2 l. iso-PrOH and refluxed 1 hr. gave 177.2 g. II (R = Me2N, R' = Me, X = Cl), m. 145.5-6.5° (MeOH), which hydrogenated gave II (R = Me2N, R' = Me, X = H) (XI), m. 242.5-3.5°. XI (2.1 g.) heated 20 min. on the steam bath with 5.8 g. III.HCl and 1.1 g. Na in 30 cc. MeOH, diluted with H2O, and treated with HCl, and the product dissolved in H2O and basified with aqueous alkali gave I (R = Me2N), m. 224-5° (aqueous iso-PrOH). Similarly were prepared the following compds. (m.p. given): II (R = MeO, R' = Me, X = Cl), 255-7° (MeCN) (92%), II (R = MeO, R' = Me, X = H), 205.5-7.5°, I (R = MeO), 229-30° (decomposition)(H2O), II (R = PhCH2NH, R' = Me, X = Cl), 157-8° (MeOH) (57%), II (R = PhCH2NH, R' = Me, X = H), 189.5-91.5°, I.HCl (R = PhCH2NH), 231-3° (decomposition) (H2O)(56%). II (R = Me, R' = X = H), (30 g.) and 650 cc. 30% HCl-MeOH stirred 42 hrs. at room temperature gave 15.4 g. (R = R' = Me, X = H), m. 165-7° (H2O), which with III yielded 13% I (R = Me), m. 210° (decomposition) (EtOH). 5,6-Diaminouracil-HCl (17.9 g.) in 250 cc. H2O stirred 1 hr. on the steam bath with 14.9 g. cyclohexylglyoxal hemihydrate, and the product boiled with 40 cc. H2O and 90 cc. AcOH yielded 7.5 g. 7-cyclohexyllumazine (XII), m. 229-31° (aqueous AcOH). XII (16.5 g.), 9.0 g. NaOH, and 90 cc. H2O heated 17 hrs. at 165° in an autoclave yielded 8.0 g. II (R = cyclohexyl, R' = X = H), m. 182.5-3.5° (aqueous iso-PrOH), which esterified with MeOH-HCl gave II (R = cyclohexyl, R' = Me, X = H) (XIII), m. 173-4.5°. XIII with III gave I (R = cyclohexyl), m. 221-2° (decomposition). Similarly were prepared from the appropriate acids by esterification with MeOH the following II (R' = Me, X = H) which were further converted to the I (R, m.p., and % yield of II and m.p. of I given): Ph, 231-2°, --, 224-6° (decomposition) (MeCN) (51%); iso-Pr, 125.5-6.5° (iso-PrOH), 70, --; cyclopropylmethylamino, 132-3° (iso-PrOH), 78, --; PhNH, 171.5-73°, 71, --; CF3NH, 153-4° (iso-PrOH), 97, --; 4-piperidylmethyl, 95-7°, 69, --; pyrrolidinyl, 168-71°, 95, ---. Me2NC(:NH)NH2.H2SO4 (15 g.) refluxed 0.5 hr. with 2.3 g. Na in 200 cc. absolute MeOH, filtered, concentrated to 30 cc. and treated with X yielded 1-(3,5-diaminopyrazinoyl)-3,3-dimethylguanidine-HCl. [MeSC(NH2)2]HSO4 (XIV) (13.9 g.) and 9.2 g. H2NCH2CH2OH in 40 cc. H2O heated 20 min. on the steam bath gave 12.5 g. HOCH2CH2NHC(:NH)NH2.H2SO4, m. 127.5-35.5° (aqueous EtOH), which was converted to 1-(3,5-diaminopyrazinoyl)-3-(2-hydroxyethyl)guanidine HCl salt. PhCH2NH2 (80.3 g.) and 69.5 g. XIV in 200 cc. H2O kept 18 hrs. at room temperature, and the product (78 g.), m. 203-7°, dissolved in 200 cc. boiling H2O, treated with 48.8 g. BaCl2 hydrate, filtered, and evaporated yielded 51.5 g. PhCH2NHC(:NH)NH2.HCl (XV), m. 175-8° (aqueous EtOH). XV (9.3 g.) and 1.0 g. Na in 30 cc. iso-PrOH treated with 1.68 g. X gave 1-(3,5-diaminopyrazinoyl)-3-benzylguanidine (XVI). Similarly as XV was prepared p-MeOC6H4NHC(:NH)NH2.HCl, 69%, m. 132-7°, and converted to the 3-(p-MeOC6H4CH2) analog of XVI. Examples for the formulation of X and XVI are given.

IT *5148-61-8*, Pyrazinecarboxamide, N-amidino-3-amino-6-cyclohexyl-
(preparation of)

RN 5148-61-8 CAPLUS
CN Pyrazinecarboxamide, N-amidino-3-amino-6-cyclohexyl- (7CI, 8CI) (CA INDEX NAME)



L7 ANSWER 30 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1965:480720 CAPLUS
DOCUMENT NUMBER: 63:80720
ORIGINAL REFERENCE NO.: 63:14885c-f
TITLE: β-Hydroxyalkyldimethylxanthines

INVENTOR(S): Soemmer, Armin; Kern, Rudi; Doff-Sotta, Manfred
SOURCE: 3 pp.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

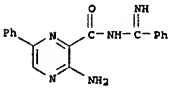
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 31894		19650426	DD	19620528

AB Theobromina (I) and theophyllina (II) were converted into their N-β-hydroxyalkyl derivs. by heating with a 1,2-epoxide and an amine in H2O, alcs., or thair mixts. Primary, secondary, or tertiary amines containing similar or different alkyl or hydroxyalkyl groups of up to 3 C atoms were suitable catalysts. Pure colorless products were obtained without recrystn. Mother liquors could be used repeatedly without adding more catalyst. Thus, 100 g. I, 50 g. propylene oxide (III), and 40 ml. MeN(CH2CH2OH)2 (IV) in 600 ml. BuOH were refluxed 1.5 hrs. with stirring. Charcoal was added, the solution filtered hot, and cooled to give 91% 1-(βhydroxypropyl)theobromine (V), m. 141-2°. When 10 ml. Et2NH was used instead of IV and the mixture refluxed 3 hrs., a 89.5% yield of V resulted. The use of the Et2NH-containing mother liquor as a solvent produced V in 97% yield. Ethylene oxide (45 g.) was added slowly into a boiling mixture of 100 g. II, 10 ml. Et2NH, 450 ml. MeOH, and 50 ml. H2O, and the mixture boiled 5 hrs., treated with charcoal, filtered, and cooled to give 99 g. 7-(β-hydroxyethyl)theophylline (VI, R = H), m. 159-60°; another 17 g. was obtained on concentration of the mother liquor. A mixture of 20 g. II, 20 g. III, 100 ml. MeOH, and 2 ml. Et2NH was refluxed 6 hrs. and most MeOH distilled to leave VI (R = Me), m. 133°. II (20 g.), 15 g. epichlorohydrin, 120 ml. iso-PrOH, and 2 ml. Et2NH, refluxed 2.5 hrs. and a part of iso-PrOH distilled, gave VI (R = CH2Cl), m. 146-7° (aqueous MeOH). Cf. CA 58, 1473e.

IT *3584-28-9*, Pyrazinecarboxamide, 3-amino-N-benzimidoyl-6-phenyl- (preparation of)

RN 3584-28-9 CAPLUS

CN Pyrazinecarboxamide, 3-amino-N-benzimidoyl-6-phenyl- (7CI, 8CI) (CA INDEX NAME)



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GI For diagram(s), see printed CA Issue.

AB A suspension of 765 g. Me 3-aminopyrazinecarboxylate in 5 l. C6H6 was treated with 1.99 l. SO2Cl2, refluxed for 5 hrs., and left overnight at room temperature to give 888 g. crude Me 3-amino-5,6-dichloropyrazinecarboxylate (I), m. 233-4°. Into a solution of 100 g. I in 1 l. dry Me2SO dry NH3 was passed under stirring at 65-70° for 45 min., then at 10° for 1.25 hrs. to give 82.5 g. Me 3,5-diamino-6-chloropyrazinecarboxylate (II), m. 212-13°. A mixture of 14.2 g. II, 9 g. Pd-C, 4 g. MgO, and 250 ml. MeOH was shaken under H for 18 hrs. at room temperature to give Me 3,5-diaminopyrazinecarboxylate (III), m. 252-4° (decomposition) (iso-PrOH). Bromination of a suspension of 2 g. III in 25 ml. AcOH at 50° with 2.1 g. Br in 10 ml. AcOH gave 1.2 g. Me 3,5-diamino-6-bromopyrazinecarboxylate (IV), m. 217-19°. Hg(OAc)2 (3.2 g.) and a solution of 2.5 g. iodine in 20 ml. warm dioxane was added rapidly to a suspension of 1.7 g. III in 30 ml. H2O at 70°, the mixture heated for 5 min., coolad to room temperature, and treated with 50 ml. 15% KI solucion precipitated 1.2 g. Me 3,5-di-amino-6-iodopyrazinecarboxylate, m. 200-2°. I (11.1 g.), 500 ml. iso-PrOH, 14.4 g. PhNH2, and 12.8 g. PhNH2.HCl was refluxed 24 hrs. under stirring to give 10 g. Me 3-amino-5-anilino-6-chloropyrazinecarboxylate, m. 171.5-73° (iso-PrOH). Similarly were prepared Me 3-amino-5-(p-chloroanilino)-6-chloropyrazinecarboxylate, m. 207-8° (MeCN), and Me 3-amino-5-dimethylamino-6-chloropyrazinecarboxylate (V), m. 145.5-6.5° (MeOH). A solution of 10 g. MeSH in 17 ml. 20% NaOH and 100 ml. MeOH was added to a boiling mixture of 17.7 g. I and 1 l. MeOH and refluxed 15 min. to precipitate 12 g. Me 3-amino-5-methylthio-6-chloropyrazinecarboxylate (VI), m. 212-16° (MeOH). VI (23.4 g.), 35 ml. 30% H2O2, and 300 ml. AcOH was stirred 18 hrs. at room temperature to give 18.5 g. the 5-methylsulfinyl analog (VII), m. 237.5-40.5° (decomposition) (MeOH-AcOEt-HCONH2). Hydrolysis of 7.5 g. VII in 75 ml. AcOH and 12 ml. H2O on a steam bath for 3 hrs. produced 3.7 g. Me 3-amino-5-hydroxy-6-chloropyrazinecarboxylate (VIII), m. .apprx.245° (decomposition) (HCONH2-EtOH). Hydrogenation of VIII with Pd-C and MgO at room temperature resulted in Me 3-amino-5-hydroxypyrazinecarboxylate, decompose 220-60°. Also were prepared Me 3-amino-5-dimethyl-aminopyrazinecarboxylate, m. 242.5-3.5°, Me 3,5-diaminopyrazinecarboxylate, m. 252-4° (decomposition), and Me 3-amino-5-mathoxypyrazinecarboxylate, m. 205.5-7.5°. A mixture of 8.9 g. I and 20 ml. PhCH2NH2 was heated on a steam bath for 30 sec. to give 7.5 g. Me 3-amino-5-benzylamino-6-chloropyrazinecarboxylate (IX), m. 157-8° (MeOH). Hydrogenation of IX yielded Me 3-amino-5-benzylaminopyrazinecarboxylate, m. 189.5-91.5°. Treatment of 1.1 g. I with MeONa in 200 ml. boiling absolute MeOH produced 1 g. Me 3-amino-5-methoxy-6-chloropyrazinecarboxylate, m. 255-7° (MeCN). Na2S (9.6 g.) and 10 g. S was refluxed in 80 ml. absolute EtOH. Addition of 8.9 g. I at 25° and stirring for 1 hr. gave 7.8 g. Me 3-amino-5-mercapto-6-chloropyrazinecarboxylate, m. 207-8° (decomposition). To a refluxing solution of 4.44 g. I in 300 mil EtOH was added guanidine (from 1.98 g. guanidine-HCl) in 50 ml. absolute EtOH in 15 min. and the mixture refluxed 0.5 hr. to give 3.1 g. Me 3-amino-5-ethoxy-6-chloropyrazinecarboxylate, m. 123-5° (iso-PrOH). 3-Amino-6-methylpyrazinoylamide (31 g.) was heated 10 min. with 320 ml. 10% NaOH. The resulting Na salt of the acid (97 g.) was methylated with 77 g. Me2SO4 in 700 ml. MeOH 19 hrs. at room temperature to give 18 g. Me 3-amino-6-methylpyrazinecarboxylate (X), m. 138.5-40.5° (C6H6). Chlorination of 9.2 g. X with 65 ml. SO2Cl2 under cooling produced 4.4 g. Me 3-amino-5-chloro-6-methylpyrazinecarboxylate, m. 108.5-10.5° (C6H6-cyclohexane). A mixture of 30 g. 3-amino-5-methylpyrazinecarboxylic acid and a solution of 30% HCl in 650 ml. MeOH was stirred 42 hrs. at room temperature to give 15.4 g. Me 3-amino-5-methylpyrazinecarboxylate (XI), m. 165-7° (H2O). A solution of 4.18 g. Br in 3 ml. AcOH was added to a solution of 4.2 g. XI in 15 ml. AcOH in 20 min. to produce 3.6 g. Me 3-amino-5-methyl-6-bromopyrazinecarboxylate, m. 179-81°. Aminomalonamidamidine-2HCl (52.5 g.) was added to an ice-cooled solution of 28.8 g. ethylglyoxal in 450 ml. H2O. The mixture was made alkaline with .apprx.65 ml. concentrated NH4OH and left 20 hrs. at room temperature to precipitate 17.5 g. 3-amino-6-ethylpyrazinecarboxamide, m. 165.5-8.5° (iso-PrOH), which was saponified 30 min. on a steam bath with 10% NaOH to give 3-amino-6-ethylpyrazine-carboxylic acid (XII), m. 149-52°. Stirring 14 g. XII in a solution of 33% HCl in 160 ml. MeOH 24 hrs. at room temperature gave 4.3 g. XII Me ester, m. 85-7° (iso-PrOH). Also prepared were 3-amino-6-p-chlorophenylpyrazinecarboxylic acid, m. 207-13°, and its Me ester, m. 181.5-3.5°. To a suspension of 17.9 g. 5,6-diaminouracil in 250 ml. H2O at 60° 14.9 g. cyclohexylgiyoxal-0.5 H2O was added and the mixture heated 1 hr. on a steam bath to give 7.5 g. 7-cyclohexyllumazine (XIII), m. 229-31° (aqueous AcOH). A solution of 16.5 g. XIII and 9 g. NaOH in 90 ml. H2O was heated in an autoclave 17 hrs. at 105° to give 8 g. 3-amino-5-cyclohexylpyrazinecarboxylic acid, m. 182.5-3.5° (aqueous iso-PrOH); Me ester m. 173-4.5°. Similarly were prepared Me 3-amino-6-cyclohexylpyrazinecarboxylate, m. 126.5-28°, Me 3-amino-6-cyclopropylpyrazinecarboxylate, m. 112.5-14.5° (amide m. 185.5-7.5°, free acid m. 169-72°), Me 3-amino-5-phenylpyrazinecarboxylate (XIV), m. 231-2°, and Me 3-amino-6-phenylpyrazinecarboxylate (XV), m. 140-1°. Chlorination of 25.6 g. XV with 90 ml. SO2Cl2 1.5 hrs. at room temperature gave Me 3-amino 5-chloro-6-phenylpyrazinecarboxylate, m. 187.5-91.5° (AcOH). Bromination of 10.5 g. XIV in 700 ml. AcOH with 11.2 g. Br 21 hrs. at 85° gave 10.5 g. Me 3-amino-5-phenyl-6-bromopyrazinecarboxylate, m. 217-21° (AcOH). To a suspension of 103.59 g. 4,5-diamino-2,6-dihydroxypyrimidine in 1500 ml. H2O and 500 ml. concentrated NH4OH at 60° 103.71 g. 1-phenyl-1,2-propanedione was added and the mixture heated at 90° under vigorous stirring to give 82.4 g. 6(or 7)-methyl-7(or 6)-phenyllumazine, m. 281.5-2.5° (AcOH), and 32 g. 6(or 7)-phenyl-7(or 6)-methyllumazine (XVI), m. 254.5-5.5°. Saponification of XVI with 8% NaOH in an autoclave 3.5 hrs. at 170° gave 3-amino-5(or 6)-phenyl-6(or 5)-methylpyrazinecarboxylic acid, m. 193.5-4.5°; Me ester m. 163-4° (MeOH). Similarly were prepared 3-amino-5(or 6)-methyl-6(or 5)-phenylpyrazine carboxylic acid, m. 155-6°; Me ester m. 162.5-3.5° (MeOH). Me 3-amino-6-phenylpyrazinecarboxylate was chlorinated with SO2Cl2 to give Me 3-amino-5-chloro-6-phenylpyrazinecarboxylate, m. 187.5-90.5° (AcOH), and subsequently treated with Me2NH in MeOH to give Me 3-amino-5-dimethylamino-6-phenylpyrazinecarboxylate, m. 167.5-9.5° (MeOH). To 750 ml. AcOH and 3180 ml. H2O at 38°, 90 g. Me 3-aminopyrazinecarboxylate was added and Cl passed through in 25 min. to give Me 3-amino-6-chloropyrazinecarboxylate (XVII) m. 142° (decomposition) (H2O). A solution of 18.8 g. XVII, 15 g. PhNH2, and 2.5 ml. concentrated HCl in 150 ml. Me2CO was refluxed 16 hrs. to give 7.4 g. Me 3-isopropylideneamino-6-anilinopyrazinecarboxylate, m. 195.5-7.5° (iso-PrOH). A mixtura of 9.3 g. 3-amino-5,6,7,8-tetrahydroquinoxalina-2-carboxylic acid and 230 ml. absolute MeOH of 10° was treated with 30 ml. concentrated H2SO4 in 1 hr. and left 24 hrs. at room temperatura to give 1.6 g. the Me ester, m. 154-5° (1:5 MeOH-H2O). A solution of 60 g. 4-chloro-o-phenylenadiamine in 60 ml. H2O and 50 ml. 12N HCl was treated with a solution of 61.44 g. alloxan-H2O in 100 ml. H2O and stirred 1 hr. at 90° to give a precipitate of 78.4 g. 8-chloroalloxazine, m. 365-6° and 40.36 g. 7-chloro-alloxazine, (XVIII) m. 380° (Me2SO). A mixture of 44.2 g. XVIII and 190 ml. concentrated NH4OH was heated in an autoclave 10 hrs. at 165° to give 27.2% 3 amino-7-chloroquinoxalin-2-carboxylic acid, m. 191-2° (decomposition); Me astar m. 224.5-5.5° (MeCN). Also prepared are tha following XIX (R, R1, % yield, and m.p. given): Me, H, 88, 221-2°; Et, H, 89, 149-50°; Pr, H, 75, 138-40°; iso-Pr, H, 70, 125.5-6.5°; CH2:CHCH2, H, 69, 105-6.5°; Bu, H, 91, 140-2°; sec-Bu, H, 75, 106-8°; iso-Bu, H, 51, 113.5-15.5°; tart-Bu, H, 38, 98-108°; Am, H, 72, 100.5-2.5°; MePrCH, H, --, --; Et2CH, H, --, --; C6H13, H, 70, 72.5-5.5°; cyclopropylnethyl, H, 78, 132-3° cyclopropyl, H, 98, 167-9°; cyclopentyl, H, 93, 119.5-21.5°; PhCH2, H, 64, 157-8°; p-MeC6H4CH2, H, 66, 112.5-14.5°; o-FC6H4CH2, H, 84, 171-4°; p-ClC6H4CH2, H, 93, 136-7°; PhCH2CH2, H, 59, 115-19°; CF3CH2, H, 97, 153-4° CF3CH2CH2, H, 76, 124.5-5.5°; HOCH2CH2, H, 100, 155-7°; HOCH2(CHOH)4CH2, H, 60, 172-5°; NH2CH2CH2, H, 96, 265°; Me2NCH2CH2, H, 40, 257°; 4-pyridylmethyl, H, 69, 95-7°; 2-furylmethyl, H, 81, 148-9°; Me, Et, 73, 102-4°; Me, Pr, 58, 83.5-5.5°; Me, iso-Pr, 78, 75.5-7.5°; Me, CH2:CHCH2, 70, 90.5-92°; Me, Bu, 74, 59.5-61.5°; Et, Et, 54, 99-101°; Et, Pr, --, --; Et, iso-Pr, --, --; Et, CH2:CHCH2, --, --; Et, Bu, 91, 77.5-9.5°; Pr, Bu,--, --; Pr, Pr, 66, 68.5-71.5°; (NRR1 =) pyrrolidino, 95, 168-71°; (NRR1 =) 1 (hexahydroazepinyl), 75, 109-11°; (NRR1 =) N'-Methylpiperazino, 88, 186-8°; Me, NH2, 67, 136.5-38° Guanidine-HCl (XX) (26.3 g.) was added to a solution of MeONa (5.75 g. Na in 150 ml. absolute MeOH), the precipitated NaCl filtered off, and tha filtrate concentrated to 30 ml. After addition of 11.5 g. V the mixture was boiled 1 min., then maintained 1 hr. at room temperature to give 93% (3-amino-5-dimethylamino-6-chloropyrazinecarbonyl) guanidine (XXa), m. 216-17°; HCl salt m. 298° (decomposition). Similarly were prepared (3,5-diamino-6-bromopyrazin-carbonyl)guanidine, m. 232.5-5.5° (decomposition), (3,5-diamino-6-iodopyrazinecarbonyl)guanidine-HCl, m. 273-4° (decomposition) and (3-isopropylideneamino-6-anilinopyrazinecarbonyl)guanidine, m. 214-16° (decomposition). To a solution of 920 mg. Na in 50 ml. absolute iso-PrOH 3.85 g. XX was added and tha NaCl filterad off. Adding 4.4 g. I and refluxing the mixture 15 min. gave (3-amino-5,6-dichloropyrazinecarbonyl)guanidina HCl salt (XXb) m. 259-61°. The solution of XXb in 5 ml. HCONMe2 was treated with 1 ml. 25% aqueous Me2NH 1 hr. on a steam bath to giva XXa. Reaction of 11.1 g. I with 55 ml. Me2NCH2CH2OH 20 min. on a steam bath gave 9.5 g. Me 3-amino-5-(2-dimethylamino-ethoxy)-6-chloropyrazinecarboxylata (XXI), m. 134.5-6.5° (C6H6-cyclohexane). To 20 g. XX in iso-PrONa (4 g. Na in 100 ml. iso-PrOH) 9.4 g. XXI was added and the mixture heated 30 min. on a steam bath to give 2.5 g. (3-amino-5-guanidino-6-chloropyrazinecarbonyl)guanidine-2HCl, m. >340°. A mixture of 2 l. concentrated NH4OH and 300 g. XVIII was stirred 16 hrs. at room temperature to give 260 g. 3-amino-6-chloropyrazinecarboxamide (XXII), m. 227-30°. HC(OEt)3 (200 ml.) and 33 g. XXII refluxed in 200 ml. Ac2O 1.5 hrs. gave 20 g. 4-hydroxy-6-chloropteridine (XXIII), m. 268-70° (decomposition) (iso-PrOH). A solution of 5.5 g. XXIII and 4.4 g. PhCH2SH in 100 ml. 4% NaOH was heated 30 min. on a steam bath to give 5.5 g. 4-hydroxy-6-benzylthiopteridine, m. 233-5° (aqueous iso-PrOH), which was converted into 3-amino-6-benzylthiopyrazinecarboxylic acid (XXIV), m. 138-9°, by 8 hrs. hydrolysis with 5% NaOH. XXIV (8.5 g.) in 50 ml. Ac2O was heated 5 hrs. on a steam bath to give 6.6 g. 2-methyl-6-benzylthio-4H-pyrazino[2,3-d][1,3]oxazin-4-one (XXV), m. 116.5-18.5° (C6H6). To 1 g. Na in 30 ml. iso-PrOH 5 g. XX and 3.4 g. XXV were added to give, after 1 hr. at room temperature, 1.1 g. (3-amino-6-benzylthiopyrazinecarbonyl-guanidine, m. 171-3° (decomposition). Similarly were prepared 4-hydroxy-6-methylthiopteridine, m. 289.5-91.5° (aqueous iso-PrOH), 3-amino-6-methylthiopyrazinecarboxylic acid (XXVI), m. 182-4° (decomposition) (AcOEt), 2-methyl-6-methylthio-4H-pyrazino[2,3-d][1,3]oxazin-4-one, m. 189-91° (C6H6), and 3-acetamido-6-methylthiopyrazinecarbonyl)guanidine (XXVII), m. 220-2°. Addition of HCl to XXVII in H2O gave 86% (3-amino-6-methyl-thiopyrazinecarbonyl)guanidine, m. 203-5°. A solution of 0.92 g. XXVI in 15 ml. 2.5% NaOH was treated with 1.05 g. KMnO4 in 35 ml. H2O to give 0.5 g. 3-amino-6-methylsulfonylpyrazine-carboxylic acid, m. 239-42° (decomposition) (iso-PrOH), which gava, after 5 hrs. heating in Ac2O,

2-methyl-6-methylsulfonyl-4H-pyrazino[2,3-d][1,3]oxazin4-one, m. 214-16° (Me2CO), transformed into 27% 3-amino-6-methylsulfonylpyrazinecarbonyl)guanidine, m. 224-6° (decomposition) (iso-PrOH). Similarly are prepared the following XXVIIa (R, R1, % yield, and m.p. given): H, H, 93, 240.5-1.5°; 293.5° (HCl salt); Me, H, 89, 238-9°; Et, H, 63, 217-18°; Pr, H, 93,221-2°; iso-Pr, H, 75, 215°; CH2:CHCH2, H, 84, 213-14°; Bu, H, 65, 219.5°; Me-ETCH, H, 74, 208-9°; iso-Bu, H, 76, 221°; tert-Bu, H, 84, 222-3°; Am, H, 70, 215-16°; MePrCH, H, 89, 186.5-8.5°; Et2CH, H, 82, 209-11°; C6H13, H, 100, 194.5-6.5°; cyclopropylmethyl, H, 95, 220-1°; cyclopropyl, H, 85, 213-15°; cyclopentyl, H 65, 219-20°; PhCH2, H, 44, 206-9°; p-MeC6H4CH2, H, 57, 216-17°; o-FC6H4CH2, H, 100, 206-8°;. p-ClC6H4CH2, H, 96, 225-6°; PhCH2CH2, H, 57, 199-202°; CF3CH2, H, 77, 232-3°; CF3CH2CH2, H, 65, 221-2.5°; HO-CH2CH2, H, 63, 272-3°; HOCH2(CHOH)4CH2, H, 68, 223-4°; NH2CH2CH2, H, 68, 311°; Me2NCH2CH2, H, 98, 192.4-4.5°; 4-pyridylmethyl, H, 64, 239-40°; o-furylmethyl, H, 92, 217-18°; Ph, H, 95, 246.5-8.5°; p-ClC6H4, H, 95, 276-8°; Me, Et, 92, 229-30°; Me, Pr, 97, 214-15°; Me, iso-Pr, 70, 207-8°; Me, CH2:CHCH2, 95, 207-8°; Me, Bu, 95, 208-9°; Et, Et, 75, 215°; Et, Pr, 92, 224-5°; Et, iso-Pr, 75, 207-8°; Et, CH2:CHCH2, 92, 208-9°; Et, Bu, 98, 200.5-1.5°; Pr, Pr, 100, 221-2°; Pr, Bu, 84, 215-17°; (NRR1 =) pyrrolidino, 90, 244.5-5.5°; (NRR1 =) 1-hexahydroazepinyl, 49, 224-5°; (NRR1 =) N-methylpiperazino, 74, 299-300°; Me, NH2, 92, 234°.

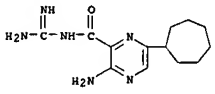
Also prepared are the following XXVIIb (X, Y, % yield, and m.p. base and m.p. HCl salt given): H, HO, 10, >310° (decomposition); H, NH2, 8, 286-8° (decomposition), --; H, NMe2, 45, 224-5° (decomposition), --; H, MeO, 52, --, 229-30° (decomposition); H, PhCH2NH, 56, --, 231-7° (decomposition); Cl, MeO, 90, --, 257°; Cl, MeS, 100, 234.5-6.5°, --; Cl, HO, 24, --, >300° (decomposition); Cl, SH, 100, 236.5° --; Cl, EtO, 81, 215-16° --; Cl, Cl, 72, --, 259-61°; Me, H, 87, 218-19 (decomposition), --; Me, Me2N, 42, --, 262° (decomposition) (di-HCl); H, Me, 13,210° (decomposition), --; Me, Me, 38, 245° (decomposition), --; Br, Me, 35, 288° (decomposition), --; Et, H, 53, 207.5-9.5° (decomposition), --; H, cyclohexyl, 71, 221-2° (decomposition), --; cycloheptyl, H, 61, 228-30° (decomposition), --; cyclopropyl, H, 61, 196.5-99° (decomposition), --; H, Ph, 51, 224-6° (decomposition); Ph, H, 34, 194.5-5.5° (decomposition), --; Ph, Ph, 87, 234.5-5.5°, -; Ph, Cl, 69, 214-16° (decomposition), --; Br, Ph, 66, 234-6° (decomposition), --; p-ClC6H4, H, 70, 282-5° (decomposition), --; Me (or Ph), Ph (or Me), 77, 212-13° (decomposition), --; Ph (or Me), Me (or Ph) 90, 218-19° (decomposition), --; Ph, Me2N, 40, 205-6° (decomposition), --; (XY =)(CH2)4, 29, 220-1°, --; (XY =) CH:CHCH:CH, 56, 211-13°, --; (XY =) HC:CClCH:CH, 70, 246-7° (decomposition), --. A solution of 13.9 g. 2-methyl-2-pseudothiuronium sulfate (XXVIII) and 9.2 g. H2NCH2CH2OH in 40 ml. H2O was heated 20 min. to give 12.5 g. (2-hydroxyethyl)guanidine sulfate, m. 127.5-35.5°, which was added to a solution of 2g. Na in 25 ml. MeOH, MeOH distilled, and the residue treated with 4.1 g. II 5 min. on steam bath to give 1.2 g. 1-(3,5-diamino-6-chloropyrazinoyl)-3-(2-hydroxyethyl)guanidine-HCl, m. 228.5-9.5° (aqueous iso-PrOH). 1-(3-Amino-5-isopropylamino-6-chloropyrazinoyl)-3-(2-hydroxyethyl)guanidine-HCl.0.5H2O, m. 185-6° (decomposition), was prepared from Me 3-amino-5-isopropylamino-6-chloropyrazinecarboxylate. A mixture of 6.1 g. II, 6.8 g. phenylguanidine, and 3 ml. iso-PrOH was heated 6 hrs. to give 1-(3.5-diamino-6-chloropyrazinoyl)-3-phenylguanidine, isolated as the MeSO3H salt, m. 272° (decomposition) (H2O). Ph-CH2NH2 (80.3 g.) and 69.5 g. XXVIII in 200 ml. H2O kept 18 hrs. at room temperature gave benzylguanidine sulfate, which was converted into the HCl salt (XXIX) (51.5 g.), m. 175-8° (aqueous EtOH), by treating its aqueous solution with aqueous BaCl2. To a solution of 1 g. Na in 30 ml. iso-PrOH 9.3 g. XXIX was added and half the volume distilled Addition of 2 g. II and heating the mixture 15 min. yielded 1 g. 1-(3,5-diamino-6-chloropyrazinoyl)-3-benzylguanidine, m. 215-16° (decomposition) (aqueous iso-PrOH). With the appropriate starting materiale the following 3-substituted 1-(3,5-diamino-6-chloropyrazinoyl)guanidines were prepared [3-substituent and m.p. (decomposition) given]: p-fluorobenzyl 216-19.5°; α-methylbenzyl 153-60°; 3-pyridylmethyl, 280.5-3.5°; 2-naphthylmethyl 243.5-5.5°. Also prepared were the following RR1-NC(:NH)NH2.HCl (R, R1, % yield, and m.p. given): p-Me-C6H4CH2 H, 28, 153-5°; o-ClC6H4CH2, Me, 32, 122.5-5.5°; PhCH2, H, 71, 131-6°; p-ClC6H4CH2, H, 55, 162.5-4.5°; p-MeOC6H4CH2, H, 69, 132-7°; 2,4-Me2C6H3CH2, H, 52, 105-15°; 2,4-Cl2C6H3CH2, H, 67, 145-8°; 3,4-Cl2C6H4CH2, H, 77, 155-7°; PhCH2CH2, H, 71, 135-8°.

Also prepared were the following XXIXa [R, R1, % yield, and m.p. (decomposition)given]: p-MeC6H4CH2, H, 27, 210-12°; PhCH2, Me, 35, 274.5° (HCl salt); o-ClC6H4CH2, H, 39, 220-3°; p-ClC6H4CH2, H, 46, 204-6° p-MeOC6H4CH2, H, 27, 175.5-9.5°; 2,4-Me2C6H3CH2 H, 59, 220-2°; 2,4-Cl2C6H3CH2, H, 30, 267.5-70.5° (HCl salt); 3,4-Cl2C6H3CH2, H, 47, 216-19°; PhCH2CH2, H, 46, 219-21.5°. To a solution of 2.3 g. Na in 200 ml. absolute MeOH 15 g. dimethyl-guanidine sulfate was added, the mixture refluxed 1 hr. and cooled, Na2SO4 filtered off, the solution concd, to 30 ml., 10.15 g. II added, and the mixture heated 30 min. and kept 1 hr. at room temperature to give 3.6 g. 1-(3,5-diamino-6-chloropyrazinoyl)-3,3-dimethyl-guanidine (XXX), decomposing at 240° HCl salt m. 275° (decomposition). To a solution of 36.57 g. Et2NH in 100 ml. H2O and 41 ml. concentrated HCl adjusted, with 3.66 g. Et2NH to pH 9.2 a solution of 50% aqueous cyanamide (65.16 g.) was added dropwise at 100° in 4 hrs. After refluxing 1 hr. and standing over night at room temperature the mixture was treated with 50 ml. of 40% NaOH and CO2 passed through under cooling to give 1,1-diethylguanidine, isolated as the HCl salt (XXXI) (35 g.), m. 147-9°. Similarly, 1,1-dibutylguanidine-HCl (XXXII), m. 104.5-106° (H2O), was obtained in 86% yield. The following compds. were also prepared: 88.6% 1-(3,5-diamino-6-chloropyrazinoyl)-3,3-diethylguanidine, m. 265° (decomposition), from II and XXXI and 72% 1-(3,5-diamino-6-chloropyrazinoyl)-3,3-dibutylguanidine, m. 148-9° (iso-PrOH), from II and XXXII. Also prepared were the following XXXIII (R, R1, % yield, and m.p. given): iso-Pr, H, 35, 238.5-40°; CH2:CHCH2, H, 39, 215°; Bu, H, 17, 187.5°; cyclopropylmethyl, H, 3, 196-7°; Me, Me, 69, 219°; Me, Et, 49, 218°; Me, iso-Pr, 61, 209-11°; Et, Et, 40,214°. The compds. are effective in the treatment of abnormal electrolyte excretion.

IT *1155-05-1*, Pyrazinecarboxamide, N-amidino-3-amino-6-cycloheptyl- *1634-17-9*, Pyrazinecarboxamide, N-amidino-3-amino-6-(p-chlorophenyl)- *1634-21-5*, Pyrazinecarboxamide, N-amidino-3-amino-6-phenyl- *2018-30-6*, Pyrazinecarboxamide, 3-amino-6-cyclopropyl- *5148-61-8*, Pyrazinecarboxamide, N-amidino-3-amino-6-cyclohexyl- (preparation of)

RN 1155-05-1 CAPLUS

CN Pyrazinecarboxamide, N-amidino-3-amino-6-cycloheptyl- (7CI, 8CI) (CA INDEX NAME)



RN 1634-17-9 CAPLUS

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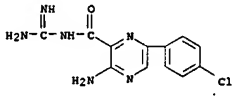

RN 1634-21-5 CAPLUS

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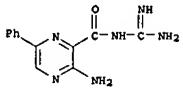

RN 2018-30-6 CAPLUS

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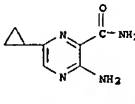
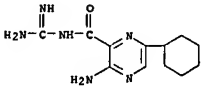


RN 5148-61-8 CAPLUS

CN Pyrazinecarboxamide, N-amidino-3-amino-6-cyclohexyl- (7CI, 8CI) (CA INDEX NAME)



L7 ANSWER 32 OF 32 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1960:23158 CAPLUS

DOCUMENT NUMBER: 54:23158

ORIGINAL REFERENCE NO.: 54:4601a-f

TITLE: Pteridines. XVIII. A direct synthesis of 2-aminopyrazine-3-carboxamides

AUTHOR(S): Vogl, O.; Taylor, Edward C.

CORPORATE SOURCE: Princeton Univ., Princeton, NJ

SOURCE: Journal of the American Chemical Society (1959), 81, 2472-4

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

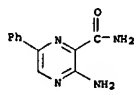
OTHER SOURCE(S): CASREACT 54:23158

AB Dry glyoxal bisulfite (45 g.) and 40 ml. concentrated NH4OH added dropwise to 30 g. aminomalonamidamidine-2HCl (I) in 300 ml. H2O at 0°, the mixture stirred overnight at room temperature, and filtered gave 76% crude 2-aminopyrazine-3-carboxamide (II), m. 241-2° (H2O or vacuum sublimation at 180°/0.01 mm.). When com. glyoxal was used, the yield was 32%. II (3.1 g.) in 20 ml. 3N NaOH refluxed 1.5 hrs., acidified with concentrated HCl (pH 3), and chilled gave 78% 2-aminopyrazine-3-carboxylic acid, m. 196° (decomposition). Pyruvaldehyde (7.2 g.) in 60 ml. H2O added to 19 g. I in 200 ml. H2O at 10°, the mixture adjusted to pH 8-9 with 10 ml. concentrated NH4OH, stirred overnight, and cooled to 0° gave 54% 2-amino-5-methylpyrazine-3-carboxamide (III), m. 203-4° after sublimation (180°/0.01 mm.) and recrystn. from MeOH. III (1.52 g.) in 10 ml. 3N NaOH refluxed, acidified (pH 3) with concentrated HCl, and cooled gave 60% 2-amino-5-methylpyrazine-3-carboxylic acid, m. 171-3° (H2O). 2-Amino-6-methylpyrazine-3carboxylic acid was reported, m. 210° and 211-12° (decomposition). Phenylglyoxal-H2O (7 g.) in 150 ml. ice-cold H2O added to 7.5 g. I in 250 ml. ice-cold H2O, the solution held at 0-5° while concentrated NH4OH was added while stirring to keep the pH at 8-9 30 min., stirred at room temperature overnight, and filtered gave 36.6% 2-amino-5-phenylpyrazine-3-carboxamide (IV), m. 239-40° (absolute EtOH). Hydrolysis of IV as described above gave 70% 2-amino-5-phenylpyrazine-3-carboxylic acid (V), m. 196° (decomposition). V (0.511 g.) in 15 ml. cold concentrated H2SO4 treated with 0.25 g. NaNO2 in 5 ml. cold concentrated H2SO4, the red solution held at 0° 4 hrs. and at room temperature 4 hrs., and stirred at room temperature overnight gave 58.5% 2-hydroxy-5-phenylpyrazine-3-carboxylic acid, m. 210° (decomposition) (H2O and EtOH). I (28.5 g.) in 300 ml. H2O at 10° added slowly with stirring to 13 g. biacetyl in 60 ml. EtOH, the mixture then treated with concentrated NH4OH, stirred several hrs., cooled to 0°, and filtered gave 92% isomers (VIIa) and (VIIb) of 2-amino-5,6-dimethylpyrazine-3-carboxamide m. 255-60° (decomposition). Extraction of 10 g. of the mixture in a Soxhlet apparatus 5 days with EtOH and evaporation of the extract gave mostly VIIa (7.47 g.), purified by vacuum distillation, m. 255° (decomposition). Extraction of the Soxhlet residue 10 min. with boiling 50% aqueous HCONMe2 and recrystn. of the residue from the extraction with boiling 50% aqueous HCONMe2 gave 1.19 g. VIIb, decompose slowly above 280°, complete decomposition between 320-30°, λ 244, 377 mμ, log ε 4.01, 4.06. Caustic hydrolysis of VIIa as described above yielded 81% 2-amino-5,6-dimethylpyrazine-3-carboxylic acid, m. 208° (decomposition).

IT *113120-69-7*, Pyrazinamide, 3-amino-6-phenyl- (preparation of)

RN 113120-69-7 CAPLUS

CN Pyrazinecarboxamide, 3-amino-6-phenyl- (9CI) (CA INDEX NAME)



=> LOG HOLD

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	153.57	321.62

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-15.75	-15.75

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